

In Pursuit of Clean Air: A Data Book of Problems and Strategies at the State Level

1987 Update

Volume 2: Federal Regions VI through X

A. F. Loughe, P. A. Gerry, and D. G. Streets

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IN PURSUIT OF CLEAN AIR: A DATA BOOK
OF PROBLEMS AND STRATEGIES AT THE STATE LEVEL

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A.F. Loughe, P.A. Gerry, and D.G. Streets

Energy and Environmental Systems Division
Policy and Economic Analysis Group

December 1987

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PREFACE

The Clean Air Act Amendments of 1977 reaffirmed a national commitment to clean air and set rigorous requirements to achieve and maintain the National Ambient Air Quality Standards across the nation. The solutions to air quality problems, however, must take place at the state and local levels. The strategies adopted by the states concern the U.S. Department of Energy (DOE) because it must identify possible conflicts between national energy policy and the pursuit of clean air.

This document is the third edition* of a report that presents attainment strategies and maps of nonattainment areas throughout the contiguous United States. *In Pursuit of Clean Air: A Data Book of Problems and Strategies at the State Level, 1987 Update* contains nonattainment data that are accurate through December 31, 1987. The report presents, by state, tables of nonattainment and maps of areas in nonattainment of standards for total suspended particulates, sulfur dioxide, carbon monoxide, ozone, or nitrogen oxide. A summary of the State Implementation Plans (SIPs), a list of Prevention of Significant Deterioration (PSD) areas, a map of PSD Class I areas, a table of general sulfur dioxide and particulate matter emission limits, and a list of specific power plant emission limits are also presented.

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*The first edition is available from the National Technical Information Service (NTIS) as Argonne National Laboratory report ANL/EES-TM-90 (February 1980) and its supplement ANL/EES-TM-129 (August 1980). The second edition is available from NTIS as ANL/EES-TM-212 (August 1982).

LIST OF ABBREVIATIONS

AQCR	air quality control region
bbl	barrel
Btu	British thermal unit
CAAA	Clean Air Act Amendments
EIA	Energy Information Administration
EPA	Environmental Protection Agency
FGD	flue gas desulfurization
FMVECP	federal motor vehicle emissions control program
I&M	inspection and maintenance
m ³	cubic meter
mg	milligram (10 ⁻³ gram)
MW	megawatt (10 ⁶ watts)
μg	microgram (10 ⁻⁶ gram)
dscf	dry standard cubic feet
NA	nonattainment area
NAAQS	National Ambient Air Quality Standards
NSPS	New Source Performance Standards
Pollutants	CO = carbon monoxide
	HC = hydrocarbons
	NO _x = oxides of nitrogen
	O ₃ = ozone
	PM = particulate matter
	SO ₂ = sulfur dioxide
	TSP = total suspended particulates
	VOC = volatile organic compounds
ppm	parts per million

PSD	prevention of significant deterioration
RACM	reasonably available control measures
RACT	reasonably available control technology
SIP	state implementation plan
TCM	transportation control measures

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1 INTRODUCTION

The Clean Air Act Amendments of 1977 set rigorous additional requirements for the cleanup of those areas of the United States where concentrations of pollutants in the ambient air exceed the levels of the National Ambient Air Quality Standards (NAAQS). NAAQS have been set for six "criteria" air pollutants, with maximum ambient concentrations specified to assure protection of public health and welfare (see Table 1.1). This legislation established December 31, 1982, as a deadline for attainment of the standards, with the possibility of an extension to December 31, 1987, for ozone (O_3) and carbon monoxide (CO). The statute had previously required the achievement of these standards no later than July 1, 1977.

To ensure that timely attainment of these standards would occur, Congress also set a deadline for submission of state implementation plans (SIPs). These plans outline additional controls on existing sources and define the review procedures and emission limits that are necessary for new sources to attain the standards by the appropriate deadline. If a state failed to have an approved SIP in effect by July 1, 1979 (or July 1, 1982, for states requesting extensions for CO and O_3 attainment), the U.S. Environmental Protection Agency (EPA) was authorized to impose sanctions on that state. These sanctions included prohibiting construction of new and modified major sources of a pollutant in an area that was designated nonattainment for that pollutant and withholding federal funds for highway projects, state air programs, and sewage treatment plants.

The nation's air quality has improved significantly since passage of the 1977 amendments. For example, the number of counties containing nonattainment areas during the period of December 1981 to December 1987 was reduced by approximately 22% for CO, 33% for nitrogen oxides (NO_x) and O_3 , 35% for sulfur dioxide (SO_2), and 40% for total suspended particulates (TSP). Despite the overall success of reducing national-level pollutant emissions through controls imposed by SIPs, a persistent problem for most major cities is attaining and maintaining air quality that meets the primary NAAQS for O_3 and CO.

Because many metropolitan areas were expected to fail to meet the December 31, 1987, deadline for CO and O_3 attainment, both EPA and Congress worked to respond to the problem through regulatory actions as well as amendments to the Clean

TABLE 1.1 National Ambient Air Quality Standards (NAAQS)

Pollutant	Averaging Time	NAAQS, $\mu\text{g}/\text{m}^3$ (ppm)	
		Primary (Health)	Secondary (Welfare)
Aerosols			
PM ₁₀ ^a	Annual	50	None
	24-hr	150	
TSP ^b	Annual	75	60
	24-hr	260	150
Lead	3-month	1.5	1.5
Gases			
SO ₂	Annual	80 (0.03)	-
	24-hr ^b	365 (0.14)	-
	3-hr ^b	-	1300 (0.50)
NO _x	Annual	100 (0.053)	100 (0.053)
CO	8-hr ^b	10 (9.0)	10 (9.0)
	1-hr ^b	40 (35.0)	40 (35.0)
O ₃	1-hr	235 (0.12)	235 (0.12)

^aPM₁₀ is a new indicator that replaces the original standard for TSP. PM₁₀ includes only smaller particle sizes (those with an aerodynamic diameter smaller than or equal to 10 μm) that can be more readily inhaled.

^bStandards for TSP, replaced by the PM₁₀ standard in 1987, are presented as a reference for use in some data representations herein.

^cShort-term standards not to be exceeded more than once per year; annual standards not to be exceeded at all.

Air Act. No final action in either of these areas occurred by the end of 1987. Addressing this problem involves difficult decisions about its causes; the types of additional controls required; and appropriate deadlines, extensions, and sanctions. The emission reductions needed for attainment are substantial. EPA estimates that 23 urban areas need a reduction of 25% or less in emissions of volatile organic chemicals (VOCs, which are ozone precursors), 25 areas need a 25-50% reduction, and 16 areas need a reduction greater than 50%.¹ Although EPA predicts that existing controls would enable most CO nonattainment areas to meet the standard by 1995, as older cars with higher emission levels are replaced by newer ones with lower emission levels, many analysts believe this prediction is overly optimistic.¹ To date, EPA has proposed a construction ban for 14 cities.²

The location of nonattainment areas and the adequacy of SIPs for those areas are matters that directly concern energy policymakers. For example, a proposal to construct a new coal-burning facility must address the effect of potential increased emissions on nonattainment areas and any likely restrictions the new emission sources would face. Energy facilities locating in a nonattainment area may be required to obtain offsets from other sources equivalent to the emissions added by the new source, plus some additional amount. Similarly, the location of "clean-air" areas is important. A large portion of projected energy-related development is in the West, which also contains the majority of pristine, or Class I, areas established under the Prevention of Significant Deterioration (PSD) program. EPA's visibility program could cause denial or delay of permits for new facilities if they have the potential to affect visibility in Class I areas.³

To address these concerns, this report updates data on nonattainment areas, SIP attainment strategies, and other air-quality-related items as of December 31, 1987. The two volumes present state-level information about nonattainment designations, SIPs for nonattainment areas, a list and map of PSD areas, tables of general SO₂ and particulate matter emission limits, as well as a list of unit-specific SO₂ SIP limits for utility generating plants. The volumes are organized by federal region, with Regions I-V in Volume 1 and Regions VI-X in Volume 2. The summary material presented in Secs. 1-5 of this text portion is repeated at the beginning of each volume. Section 1 is this introduction; Sec. 2 provides maps of U.S. counties containing nonattainment areas and summarizes attainment progress; Sec. 3 addresses the status of SIP submissions; Sec. 4 reviews the PSD program; Sec. 5 addresses future regulatory and legislative actions regarding attainment of the NAAQS; and Sec. 6 describes in detail the data for each state.

2 NONATTAINMENT

2.1 DESIGNATION OF NONATTAINMENT AREAS

Although the nation's air quality has improved significantly since the Clean Air Act was last amended in 1977, many areas of the country remain out of compliance with the NAAQS. A particular problem for most major cities is attaining and maintaining air quality that meets the primary NAAQS for O_3 and CO.

Nonattainment areas for the criteria pollutants were initially designated in May 1978. Changes in designations have been proposed by the states, and some have been accepted and promulgated by EPA. In some cases, a state has successfully argued that monitoring data were inadequate or disputable and therefore requested a redesignation to unclassified. The data on nonattainment areas presented in these volumes include only those designations in effect as of December 31, 1987.

An area is in violation of the O_3 standard if, at any one monitor, O_3 levels exceed 0.12 ppm on more than three days in a three-year period. The monitor readings are taken as one-hour average values, and a single one-hour reading above the standard constitutes an exceedance. Carbon monoxide violations are based upon the second-highest eight-hour reading in the three-year period. EPA does not consider an area in attainment until it has met the CO standard two years in a row.

Although TSP standards were replaced by PM_{10} standards in 1987, data are provided on TSP nonattainment to indicate the scope of the particulate problem and provide continuity with previous measures of particulate nonattainment. The new PM_{10} standard is $150 \mu g/m^3$ taken as a 24-hour average.⁴ An area is in attainment if it exceeds the standard no more than once a year; three years of data are required to demonstrate attainment. No areas are currently considered PM_{10} nonattainment areas, and none will be classified as such until at least three years after EPA approves SIPs for those areas. Currently, EPA has classified areas into three groups, according to their probability of violating the standards. Those areas in Group I have a 95% probability of violating the standard; those in Group II have a 20-95% probability; Group III areas are considered unlikely to violate the standards. Tables 2.1 and 2.2 list those areas included as Group I or Group II under the PM_{10} ambient air standard. EPA's principal measure for estimating PM_{10} attainment is data on TSP.

2.2 LOCATION OF NONATTAINMENT AREAS

Figures 2.1-2.5 present a series of national maps identifying counties containing nonattainment areas for SO_2 , TSP, CO, O_3 , and NO_x , as designated on December 31, 1987. Ozone nonattainment is the most prevalent problem in the United States, with significant portions of the densely populated Northeast, Midwest, Gulf Coast, and Southern California counties in violation of the standard. TSP nonattainment is the next most prevalent problem, with 40 states containing at least one area in violation of the standard. The highest concentrations are generally found in the industrial Midwest and arid areas of the West. Because motor vehicles are responsible for most CO emissions

TABLE 2.1 Areas Classified as Group I under the PM₁₀ Ambient Air Standard (95% probability of violating the standard)

EPA Region	State	County	Area
I	Connecticut	New Haven	Interstate 95 Corridor
		Fairfield	Interstate 95 Corridor
	Maine	Aroostook	Presque Isle
III	West Virginia	Brooke	Follansbee Area
V	Illinois	Madison	Entire county
		Cook	Entire county
	Indiana	Lake	Entire county
		Porter	Entire county
	Michigan	Wayne	Entire county
	Minnesota	Ramsey	Entire county
	Ohio	Cuyahoga	Entire county
		Jefferson	Entire county
VI	New Mexico	Dona Ana	Entire county
	Texas	El Paso	Entire county
VIII	Colorado	Archuleta	Pagosa Springs
		Adams	Denver area
		Arapahoe	Denver area
		Denver	Denver area
		Fremont	Canyon City
		Jefferson	Denver area
		San Miguel	Telluride
		Pitken	Aspen
		Prowers	Lamar
	Montana	Flathead	Kalispell
		Lake	Roran, Polson
		Lincoln	Libby
		Missoula	Missoula
		Rosebud	Lame Deer
		Silver Bow	Butte
	Utah	Salt Lake	Salt Lake City area and Magna
		Utah	Provo
	Wyoming	Sheridan	Sheridan

TABLE 2.1 (Cont'd)

EPA Region	State	County	Area
IX	Arizona	Cochise	Paul Spur, Douglas area
		Pinal	Hayden, Miami area, Phoenix planning area
		Gila	Hayden, Miami area
		Maricopa	Phoenix planning area
		Yuma	Yuma planning area
		Pima	Rillito planning area
	California	Fresno	San Joaquin Valley
		Imperial	Imperial Valley and Yuma planning areas
		Inyo	Owens Valley planning area and Searles Valley
		Kern	San Joaquin Valley and Searles Valley planning area
		Kings	San Joaquin Valley
		Los Angeles	Los Angeles metropolitan area
		Mono	Mammoth Lakes planning area
		Orange	Los Angeles metropolitan area
		Riverside	South Coast Air Basin and Coachella Valley
		San Bernardino	South Coast Air Basin and Searles Valley planning area
		Tulare	San Joaquin Valley
	Nevada	Clark	Las Vegas planning area
		Washoe	Reno planning area
X	Alaska	Anchorage	Anchorage
		Juneau	Juneau
	Idaho	Ada	Boise
		Bonner	Sandpoint
		Bannock	Pocatello
		Power	Pocatello
		Shoshone	Pinehurst
	Oregon	Jackson	Medford and White City
		Josephine	Grants Pass
		Klamath	Klamath Falls
		Lane	Eugene and Springfield
	Washington	King	Seattle area
		Pierce	Tacoma area
		Spokane	Spokane
		Thurston	Lacey
		Walla Walla	Walla Walla
		Yakima	Yakima

TABLE 2.2 Areas Classified as Group II under the PM₁₀ Ambient Air Standard (20%-95% probability of violating the standard)

EPA Region	State	County	Area of Concern
II	New Jersey	Camden Hudson	Camden Jersey City
	New York	Onondaga	Solvay
III	Maryland	Baltimore	Baltimore
	Pennsylvania	Allegheny	Entire county
		Erie	Entire county
		Lawrence	Entire county
		Mercer	Entire county
		Philadelphia	Bridesburg, Port Richmond
	Virginia	Buchanan	Entire county
	West Virginia	Hancock	Entire county
		Brooke	Remainder of county not in Group I
IV	Alabama	Jefferson	North Birmingham, Leeds
	Kentucky	Boyd	Catlettsburg, Ashland
V	Illinois	DuPage	Addison
		LaSalle	Oglesby
		Macon	Decatur
		Randolph	Baldwin
		Rock Island	Rock Island, Moline
		St. Clair	East St. Louis
		Will	Joliet
	Indiana	Marion	Subpart of Indianapolis
		Vigo	Terre Haute
	Michigan	Monroe	Monroe
		Saginaw	Carrollton
	Minnesota	Hennepin	Minneapolis
		Itasca	Iron Range
		Lake	Two Harbors Township
		St. Louis	Duluth and Iron Range
		Stearns	St. Cloud Township

TABLE 2.2 (Cont'd)

EPA Region	State	County	Area of Concern
VI	Ohio	Belmont	Martins Ferry
		Butler	Middletown
		Columbiana	East Liverpool
		Franklin	Columbus
		Hamilton	Cincinnati
		Lorain	Sheffield township
		Mahoning	Youngstown
		Montgomery	Dayton
		Richland	Mansfield
		Sandusky	Jackson township
		Scioto	New Boston
		Seneca	Thompson township
		Stark	Canton
		Summit	Akron
		Trumbull	Warren, Howland township
		Wyandot	Carey
	Wisconsin	Brown	DePere
		Dane	Madison
		Douglas	Superior
		Milwaukee	Milwaukee
		Waukesha	Waukesha
VI	New Mexico	Bernalillo	Entire county
		Grant	Entire county
		Sandoval	Entire county
		Santa Fe	Entire county
		Taos	Entire county
	Texas	Dallas	Entire county
		Harris	Entire county
		Lubbock	Entire county
		Nueces	Entire county
VII	Iowa	Cerro Gordo	Mason City
		Linn	Cedar Rapids
		Polk	Des Moines
	Kansas	Wyandotte	Kansas City
	Nebraska	Cass	Weeping Water
		Douglas	Omaha
	Oklahoma	Comanche	Entire county
VIII	Colorado	Adams	Brighton
		Boulder	Longmont
		Delta	Delta
		Eagle	Vail

TABLE 2.2 (Cont'd)

EPA Region	State	County	Area of Concern
VIII	Colorado (Cont'd)	El Paso	Colorado Springs
		Garfield	Glenwood Springs, Rifle
		Gunnison	Crested Butte
		Routt	Steamboat Springs
		Mesa	Grand Junction, Fruita
		Weld	Greeley
	Montana	Blaine	Hays
		Deer Lodge	Anaconda
		Flathead	Columbia Falls
		Lewis and Clark	Helena
		Lincoln	Eureka
IX	Arizona	Sanders	Thompson Falls
		Pennington	Rapid City
		Fremont	Lander
		Apache	Show Low planning area
		Cochise	Tucson planning area
		Coconino	Flagstaff planning area
		Graham	Stafford planning area
		Navajo	Show Low and Joseph City planning areas
		Pima	Ajo and Tucson planning areas
		Pinal	Casa Grande planning area
X	California	Santa Cruz	Nogales planning area
		Kern	Southeast Desert Air Basin
		Los Angeles	Southeast Desert Air Basin
		San Joaquin	Entire county
		Santa Clara	Entire county
	Nevada	Stanislaus	Entire county
		Elko	Battle Mountain area
		Eureka	Battle Mountain area
		Humboldt	Battle Mountain area
		Lander	Battle Mountain area
	Alaska	Fairbanks	Fairbanks
	Idaho	Caribou	Conda
	Oregon	Deschutes	Bend
		Lane	Oakridge
		Multnomah	Portland
		Union	LaGrande
	Washington	Benton	Kennewick
		King	Bellevue

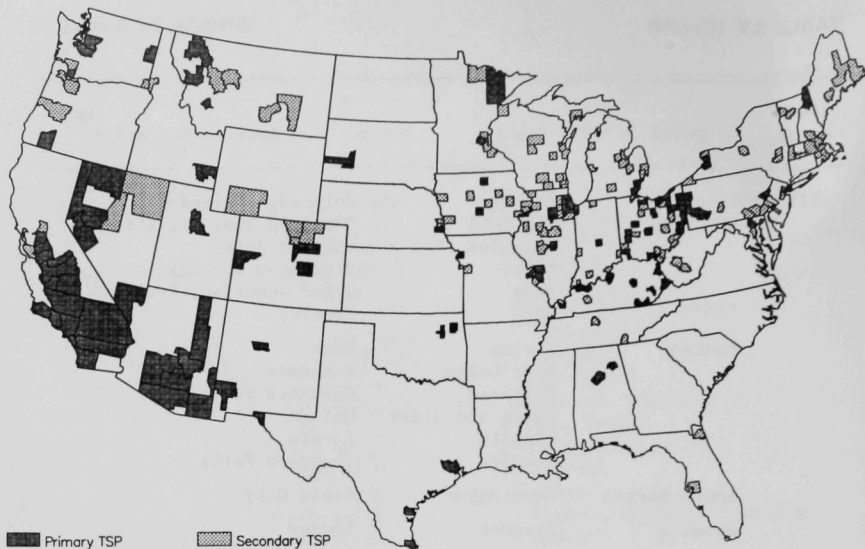


FIGURE 2.1 National TSP Nonattainment Counties as of December 31, 1987

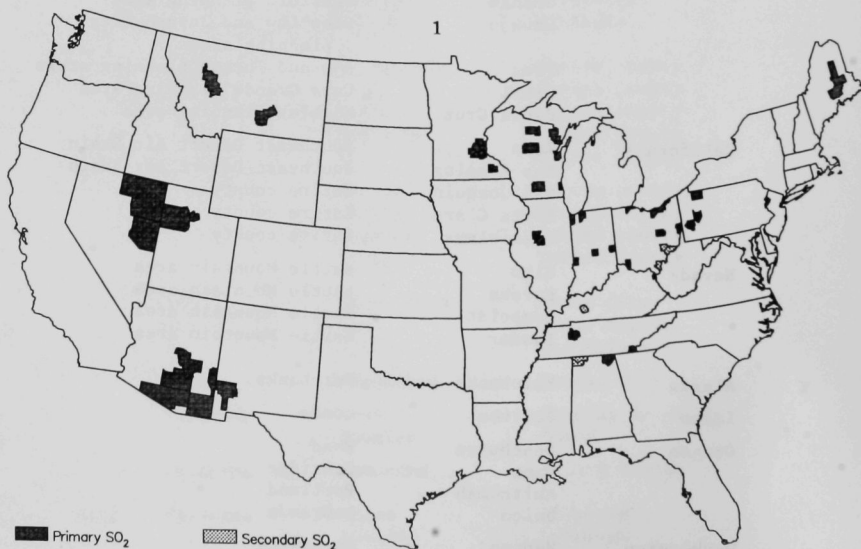


FIGURE 2.2 National SO₂ Nonattainment Counties as of December 31, 1987

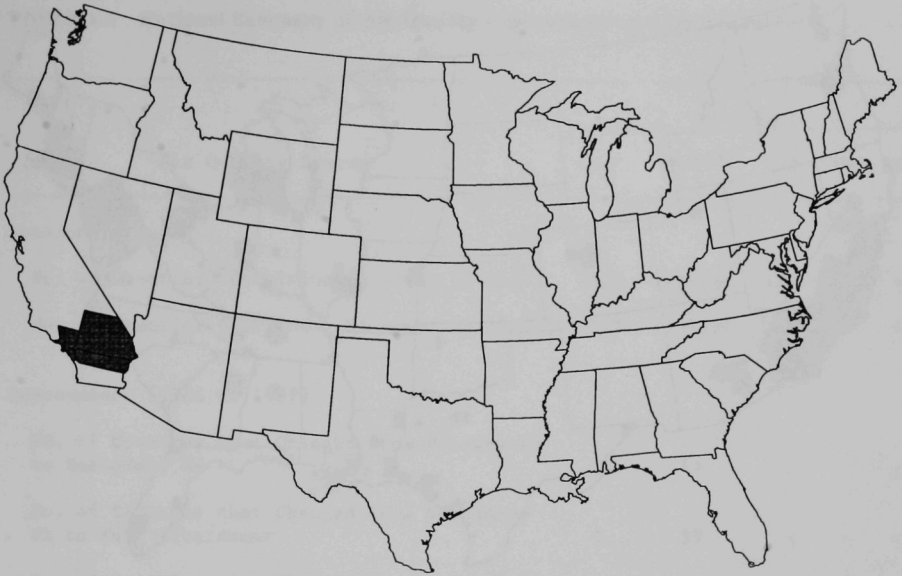


FIGURE 2.3 National NO_x Nonattainment Counties as of December 31, 1987

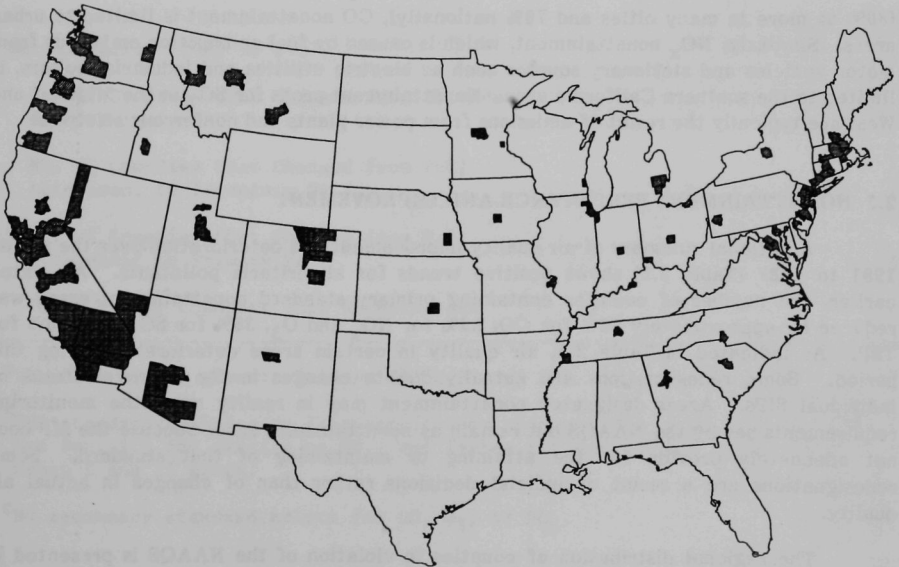


FIGURE 2.4 National CO Nonattainment Counties as of December 31, 1987

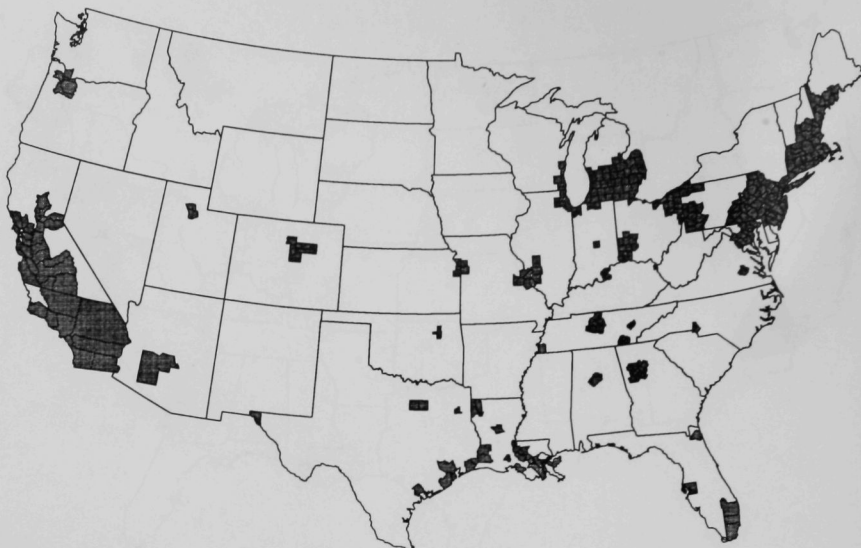


FIGURE 2.5 National O₃ Nonattainment Counties as of December 31, 1987

(80% or more in many cities and 70% nationally), CO nonattainment is limited to urban areas. Similarly, NO_x nonattainment, which is caused by fuel combustion emissions from motor vehicles and stationary sources such as electric utilities and industrial boilers, is limited to the southern California area. Nonattainment areas for SO₂ in the Midwest and West are typically the result of emissions from power plants and nonferrous smelters.

2.3 NONATTAINMENT PERSISTENCE AND IMPROVEMENT

A national summary of air quality improvement and deterioration over the period 1981 to 1987 (Table 2.3) shows positive trends for all criteria pollutants. As stated earlier, the number of counties containing primary standard nonattainment areas was reduced by approximately 22% for CO, 33% for NO_x and O₃, 35% for SO₂, and 40% for TSP. As indicated in Table 2.3, air quality in certain areas deteriorated during this period. Some redesignations are actually due to changes in the approval status of individual SIPs. Areas designated nonattainment may in reality meet the monitoring requirements set by the NAAQS but remain as nonattainment areas because the SIP does not adequately provide for the attaining or maintaining of that standard. Some redesignations are a result of judicial decisions rather than of changes in actual air quality.

The regional distribution of counties in violation of the NAAQS is presented in Table 2.4. (Figure 2.6 displays the boundaries of the federal regions.) Data are provided

TABLE 2.3 National Summary of Air-Quality Improvement and Deterioration

Air Quality Status	Pollutant				
	SO ₂ ^a	TSP ^{a,b}	CO	O ₃	NO _x
Attainment					
No. of Counties Containing NA Areas in 1981	79/8	205/204	155	495	6
No. of Counties Containing NA Areas in 1987	52/7	123/177	119	329	4
Improvement (1981 to 1987)					
No. of Counties that Changed from Primary NA to Secondary NA	2	44	c	c	c
No. of Counties that Changed from Secondary NA to Full Attainment	2	59	c	c	c
No. of Counties that Changed from Primary NA to Full Attainment	30	46	39	169	2
Total No. of Counties that Improved	34	149	39	169	2
Deterioration (1981 to 1987)					
No. of Counties that Changed from Secondary NA to Primary NA	0	4	c	c	c
No. of Counties that Changed from Full Attainment to Secondary NA	0	9	c	c	c
No. of Counties that Changed from Full Attainment to Primary NA	5	4	3	3	0
Total No. of Counties that Deteriorated	5	17	3	3	0

^aWhen two values given: Primary NA/Secondary NA.

^bTSP standard replaced by fine particulate standard (PM₁₀) on July 31, 1987. See Sec. 2.1 for details on PM₁₀ and Tables 2.1 and 2.2 for a list of Group I and II areas.

^cNo secondary standard exists for CO, O₃, or NO_x.

TABLE 2.4 Number of Counties Designated in Violation of the NAAQS as of December 31, 1981, and December 31, 1987

Federal Region	Total No. of Counties	Number of Counties in Nonattainment									
		SO ₂		TSP		CO		O ₃		NO _x	
		81	87	81	87	81	87	81	87	81	87
I	67	2	1	29	16	17	11	56	43	0	0
II	83	1	1	17	15	26	21	54	30	0	0
III	243	9	4	32	26	8	8	91	55	0	0
IV	735	12	9	32	22	10	8	46	33	0	0
V	524	43	32	162	117	27	12	142	81	1	0
VI	502	2	1	16	9	4	2	35	30	0	0
VII	411	1	0	32	23	6	4	10	9	0	0
VIII	291	6	4	27	21	16	14	9	8	1	0
IX	88	8	7	41	34	30	27	42	35	4	4
X	119	3	0	21	17	11	12	10	5	0	0
Total	3063	87	59	409	300	155	119	495	329	6	4



FIGURE 2.6 Boundaries of the Federal Regions

for both 1981 and 1987. Region V, the industrial Midwest, has the largest number of counties containing nonattainment areas for SO_2 , TSP, and O_3 . Region IX has the largest percentage of its counties in nonattainment for all criteria pollutants except O_3 , for which Region I has the highest percentage. Table 2.5 provides a historical perspective on nonattainment.

TABLE 2.5 Numbers of Counties Designated in Violation of the Primary NAAQS

Source of Data	Date of Data	SO_2	TSP	CO	O_3	NO_x
ANL/EES-TM-90 ^a	May 1979	93	248	169	571	7
ANL/EES-TM-129 ^a	July 1980	87	227	167	522	7
ANL/EES-TM-212 ^b	Dec. 1981	79	205	155	495	6
Unpublished data	Dec. 1985	55	125	130	349	4
ANL/EES-TM-345 ^c	Dec. 1987	52	123	119	329	4

^aFirst edition and supplement.

^bSecond edition.

^cThird edition (this report).

3 STATE IMPLEMENTATION PLANS (SIPs)

3.1 BACKGROUND

The 1977 Clean Air Act Amendments and subsequent EPA regulations required states to submit SIPs for all nonattainment areas by January 1, 1979. Under Part D of the Act, the SIPs were to outline strategies and regulations necessary to attain the NAAQS by December 31, 1982. A five-year extension to December 31, 1987, for attainment of the CO and O₃ standards was possible if the SIP indicated that, despite the implementation of reasonably available control technology (RACT) on stationary sources of hydrocarbons (precursors of ozone), attainment could not be achieved by the earlier deadline. Additional controls were required for O₃ and CO nonattainment areas to qualify for this extension. In particular, states were required to establish annual automobile inspection and maintenance (I&M) programs in areas with unacceptable air quality.

Two sets of sanctions were established in the 1977 amendments: (1) sanctions to address failures to submit plans meeting the requirements of Part D and (2) sanctions to address failures to implement the portions of a state's plan that EPA has already approved.⁵ A ban on the construction of major new pollution sources, or changes to existing sources, is mandatory upon EPA's disapproval of an area's Part D plan. Other sanctions, such as a cutoff of federal funds for highway construction, state air programs, or sewage treatment plant construction, may be applied if EPA finds the state is not making reasonable efforts to submit an adequate plan. If EPA finds that a state has failed to carry out its plan for a particular nonattainment area, the construction ban applies. EPA can also cut off sewage treatment plant and air program grants under that finding.

3.2 REVISED SIPs

Revised SIPs were to include the following data for the pollutant for which an area was designated nonattainment: an emission inventory; emission limits on existing sources; a procedure for new-source review; and a strategy for making "reasonable further progress," that is, annual incremental reductions in emissions that would provide for attainment of the standard by the statutory deadline. The EPA regional offices reviewed the SIPs and recommended appropriate action. Final promulgation of the ruling was made by EPA headquarters and published in the Federal Register.

Only one state had an EPA-approved SIP in effect by the 1979 deadline, and only 28 states had complete EPA-approved SIPs two and a half years after the deadline. In order to avoid imposing sanctions on many states, EPA agreed to review submissions of partial SIPs (e.g., plans for an individual nonattainment area or plans for a particular pollutant). EPA determined that the construction ban only applied to the exact nonattainment area that did not have an approved SIP; states could request an exemption for any portion of a nonattainment area with an approved SIP. Furthermore, EPA made possible the conditional approval of a revised SIP, contingent upon the state's agreement to correct any identified deficiencies of the plan by an EPA-determined deadline. If a

state failed to meet this deadline, the EPA considered reinstating the ban on new sources. The agency has not yet reinstated any ban for a state's failure to correct deficiencies under a conditionally approved SIP.

3.3 SIPs WITH EXTENSIONS

States requesting extensions of the deadline for O₃ and CO attainment were to submit "extension SIPs" by July 1, 1982, showing attainment by the end of 1987. EPA approved the SIPs for many of these "extension areas" in the 1983-85 period (see Table 3.1). It has also disapproved some extension SIPs and not yet acted on others.

In order to be approved, extension SIPs were to include the following:

- Legally enforceable measures to impose RACT on existing sources.
- Identification of any measures beyond RACT that would be necessary to assure timely attainment.
- Rules and regulations necessary for full implementation of an I&M program by December 31, 1982.
- Commitments and schedules for implementing transportation control measures, including funding and legal authority to support the commitments.

The same sanctions that were imposed on states without revised SIPs by the July 1, 1979, deadline were to be imposed on states failing to meet the July 1982 deadline.

3.4 SANCTIONS

As of January 1, 1986, 16 states had areas that were not under an extended deadline and that did not have revised, approved SIPs. Consequently, a ban on new-source permits was imposed, applicable to any new major source of the pollutant for which the area was in nonattainment (see Table 3.2). A major source is one capable of emitting 100 tons or more of the pollutant per year. Sources likely to be affected by a construction ban include petroleum refineries, industrial boilers, iron and steel production plants, and electric utilities. The impact of the construction ban differs according to site-specific characteristics of the nonattainment areas. For example, nonattainment areas for SO₂ and TSP are typically small, subcounty areas. The O₃ nonattainment areas tend to be much larger, urban areas, where a ban could have a much greater effect.

The construction ban for TSP areas was lifted when the standard was replaced by the new PM₁₀ standard in 1987. However, the TSP areas are listed to show those areas that had trouble meeting the old standard for particulates. The control measures specified in current SIPs remain in effect until the PM₁₀ SIPs are approved.

TABLE 3.1 States Receiving an Extension Beyond 1982 for Attaining the Ozone and Carbon Monoxide Standards

EPA Region	O ₃	CO
I	Connecticut Massachusetts	Connecticut Massachusetts New Hampshire
II	New Jersey New York	New Jersey New York
III	Delaware District of Columbia Maryland Pennsylvania Virginia	District of Columbia Maryland Virginia Pennsylvania
IV	Kentucky	Georgia Kentucky North Carolina Tennessee
V	Illinois Indiana Michigan Ohio Wisconsin	Illinois Indiana Michigan Ohio Wisconsin
VI	Texas	New Mexico
VII	Missouri	Missouri
VIII	Colorado Utah	Colorado Utah
IX	California	California Nevada
X	Oregon Washington	Alaska Idaho Oregon Washington

TABLE 3.2 Nonextension Nonattainment Areas under a Construction Ban as of January 1, 1986^a

EPA Region	State	Area	Pollutant
II	New York	Erie County	TSP
IV	Alabama	Etowah County	TSP
		Jefferson County	TSP
	Kentucky	Kenton County	O ₃
		Campbell County	O ₃
V	Illinois	Peoria County	SO ₂
		Tazewell County	SO ₂
		Cook County	TSP, O ₃
		DuPage County	TSP, O ₃
		Will County	TSP
		Rock Island County	TSP
		Madison County	TSP, O ₃
		LaSalle County	TSP
		Macon County	TSP
		Kane County	O ₃
		Lake County	O ₃
		Monroe County	O ₃
		St. Clair County	O ₃ , TSP
		Williamson County	O ₃
		Macoupin County	O ₃
	Indiana	Marion County	TSP
		Lake County	TSP
		Wayne County	SO ₂
	Minnesota	Anoka County	SO ₂ , CO
		Carver County	SO ₂ , CO
		Dakota County	SO ₂ , CO
		Hennepin County	TSP, SO ₂ , CO
		Olmstead County	SO ₂ , CO
		Ramsey County	TSP, SO ₂ , CO
		St. Louis County	TSP, CO
		Scott County	SO ₂ , CO
		Sherbourne County	CO
		Washington County	SO ₂ , CO
	Ohio	Belmont County	TSP
		Columbiana County	TSP
		Cuyahoga County	TSP
		Franklin County	TSP
		Hamilton County	TSP
		Jefferson County	TSP

TABLE 3.2 (Cont'd)

EPA Region	State	Area	Pollutant
V	Ohio (Cont'd)	Lake County	TSP
		Lawrence County	TSP
		Logan County	TSP
		Lorain County	TSP
		Mahoning County	TSP
		Miami County	TSP
		Monroe County	TSP
		Montgomery County	TSP
		Richland County	TSP
		Sandusky County	TSP
		Scioto County	TSP
		Stark County	TSP
		Summit County	TSP
		Trumbull County	TSP
	Wisconsin	Brown County	SO ₂
		Milwaukee County	SO ₂
VI	Texas	Harris County	TSP, CO
VII	Nebraska	Lancaster County	CO
		Douglas County	CO
	Missouri	Buchanan County	TSP
IX	Arizona	Maricopa County	TSP
		Navajo County	TSP
		Pima County	TSP, SO ₂
		Gila County	TSP, SO ₂
		Cochise County	TSP, SO ₂
		Greenlee County	TSP, SO ₂
		Pinal County	SO ₂
	California	Fresno	O ₃ , CO
		San Bernardino	TSP
	Nevada	White Pine	SO ₂
	Guam	Piti	SO ₂
		Tanguisson	SO ₂
X	Oregon	Medford	CO

^aConstruction bans for TSP nonattainment areas were lifted on July 31, 1987, when the new PM₁₀ standard took effect. They are listed here for reasons described in the text.

A more difficult decision regarding sanctions occurs when a nonattainment area with an approved and fully implemented SIP fails to achieve the NAAQS by the specified deadline. With the passage of the December 31, 1982, deadline, EPA concluded that nonextension areas with approved and implemented SIPs had discharged their Part D planning obligations and therefore were not subject to the Part D sanctions simply because they remained in violation of the NAAQS.⁶ Instead, EPA would treat the plan as "substantially inadequate" to assure attainment under Sec. 110(a)(2)(H) of the Act and would call for a SIP revision (a "SIP call"). This revision should provide for attainment of the standards within a fairly short period (3-5 years from EPA's approval of the revision). Table 3.3 lists areas subject to SIP calls by pollutant. States are required to submit SIP revisions within one year of the request by EPA; failure to respond adequately will result in a construction ban for failure to implement the SIP. EPA is now addressing the failures of some states to respond adequately to SIP calls by initiating rulemakings to impose the construction ban in those areas.

On July 14, 1987, EPA proposed to disapprove SIP submissions pending since 1982 for 14 extension areas that did not adequately demonstrate attainment by a "fixed near-term deadline."² All 14 cities listed in Table 3.4 would face construction bans for new sources under the proposed regulations, but none except Cleveland would face a cutoff of federal funds for highway construction and administering the Clean Air Act. EPA has already disapproved the extension SIPs and imposed a construction ban in Phoenix and Tucson, Arizona, as well as Albuquerque, New Mexico, for CO. EPA also imposed highway funding sanctions on Albuquerque for failing to make reasonable efforts to adopt an automobile I&M program.

While these EPA actions address plans that have been submitted but not approved, EPA must also take action addressing approved plans that are now considered inadequate to control O_3 and CO. Furthermore, EPA estimates that about 16 states with conditionally approved SIPs have outstanding obligations to require reasonably available control measures on stationary sources of VOCs, automobile I&M programs, and other measures.²

At the end of its first session, the 100th Congress imposed an eight-month moratorium on any sanctions that were not yet final. This moratorium is designed to give temporary relief to nonattainment areas while pressuring Congress to revise the Act in 1988. (See Sec. 5.1 for more complete discussion.)

TABLE 3.3 Areas Called Upon to Revise Inadequate SIPs (SIP call areas by pollutant)^a

Pollutant	EPA Region	State	Area	Date
O ₃	III	Pennsylvania	Scranton/Wilkes-Barre	2/24/84
		Virginia	Richmond	9/28/84
	IV	Alabama	Jefferson County	2/24/84
		Florida	Dade County	2/24/84
			Broward County	2/24/84
			Palm Beach County	2/24/84
		Georgia	Atlanta Metropolitan Area	2/24/84
		Tennessee	Memphis	9/28/84
	V	Indiana	St. Joseph County	2/24/84
			Elkhart	2/24/87
		Ohio	Portage County Summit County	2/24/84 2/24/84
	VI	Louisiana	Baton Rouge	2/24/84
		Oklahoma	Tulsa	2/24/84
		Texas	Dallas County	2/24/84
			El Paso County	2/24/84
			Tarrant County	2/24/84
			Denton County	10/5/84
	VII	Missouri	Kansas City	2/20/85
		Kansas	Kansas City	2/20/85
	IX	Arizona	Maricopa County	2/24/84
		California	Kern County	2/24/84
			Ventura County	3/17/86
			Santa Barbara County	3/17/86
		Nevada	Clark County	2/24/84
CO	IV	Florida	Miami	9/18/84 ^b
		North Carolina	Raleigh-Durham	9/18/84 ^b

TABLE 3.3 (Cont'd)

Pollutant	EPA Region	State	Area	Date
CO	V	Indiana	Marion County	2/24/84
		Minnesota	Ramsey County	2/24/87
	VI	Louisiana	Orleans Parrish	10/5/84
		Oklahoma	Oklahoma City	10/5/84
		Texas	El Paso County	2/27/84
			Harris County	10/5/84
	VII	Kansas	Wichita	2/29/84
		Nebraska	Lincoln	2/29/84
			Omaha	2/29/84
	VIII	Colorado	Greeley	10/6/86
		Utah	Provo	12/19/84
SO ₂	III	Pennsylvania	Warren County	2/24/84
	V	Illinois	Madison County	9/28/84
		Indiana	Porter County	3/26/84
			Warrick County	3/26/84
			Wayne County	2/24/84
		Michigan	Wayne County	9/28/84
		Minnesota	Dakota County	9/28/84
		Wisconsin	Statewide	4/26/84
NO _x	IX	California	South Coast	2/24/84

^aNotice of inadequate SIP. SIP is inadequate to attain and maintain NAAQS. These areas had an approved 1979 plan, but nonattainment persisted after 1982 and there was no evidence that area would attain NAAQS under existing SIP (after air quality was reviewed). These areas are nonattainment areas that must submit a new plan. Most of these new plans are still under review.

^bState-initiated SIP call.

TABLE 3.4 Areas of Proposed Construction Bans for New Sources Due to Inadequacy of Carbon Monoxide and Ozone SIPs

EPA Region	State	Area	Pollutant
IV	Georgia	Atlanta	O ₃
V	Illinois	East St. Louis Chicago	O ₃ O ₃
	Indiana	East Chicago Indiana portion of greater Louisville, Kentucky	O ₃ O ₃
	Ohio	Cleveland	CO
VI	Texas	Dallas-Ft. Worth	O ₃
VIII	Colorado	Denver	CO
IX	California	Fresno County Kern County Sacramento County South Coast Air Basin Ventura County	O ₃ , CO O ₃ O ₃ , CO O ₃ , CO O ₃
	Nevada	Washoe County	CO

Source: Ref. 2.

4 PREVENTION OF SIGNIFICANT DETERIORATION (PSD)

To prevent significant deterioration of air quality in clean-air areas, the 1977 amendments set maximum allowable increases, or increments, of additional pollution above some baseline limit for three types of areas, Class I being pristine areas with the most stringent allowable increments (see Table 4.1). The PSD program is administered primarily through preconstruction review of major new or modified sources. Each SIP must include provisions that require review of such sources. If states fail to meet this requirement, EPA administers a permit system. In addition to not exceeding the increments, a source that is subject to new source review must use Best Available Control Technology (BACT); BACT must be met for all pollutants regulated by the act.

Although the 1977 amendments established increments only for SO₂ and particulates, it directed EPA to develop, within two years, increments for other pollutants. It has not yet done so. Under court order, however, EPA is required to propose PSD increments for NO_x in February 1988.⁷ Since the new PM₁₀ standard replaces the TSP standard, states with approved PSD programs have been asked to revise their SIPs to accommodate the new PM₁₀ standard. Specific increments have not yet been established, although EPA has scheduled proposed increments for publication in October 1988.⁷

TABLE 4.1 Prevention of Significant Deterioration Increments

Pollutant	Averaging Time	Increment ($\mu\text{g}/\text{m}^3$)		
		Class I ^a	Class II ^a	Class III ^a
TSP	Annual	5	19	37
	24-hour	10	37	75
SO ₂	Annual	2	20	40
	24-hour	5	91	182
	3-hour	25	512	700

^aClass I - Designated pristine air quality areas.

Class II - All areas not designated as Class I in Clean Air Act of 1977 were automatically assigned a Class II designation.

Class III - Governors given discretion to reclassify a Class II area to a Class III area if growth constraints were imposed by a Class II designation and if the NAAQS would not be jeopardized.

Figure 4.1 presents a map of PSD Class I areas. Class I areas include international parks, national wilderness areas and national memorial parks larger than 5,000 acres, and national parks larger than 6,000 acres that were in existence on the date of enactment of the 1977 amendments. These areas may not be redesignated to Class II or Class III.

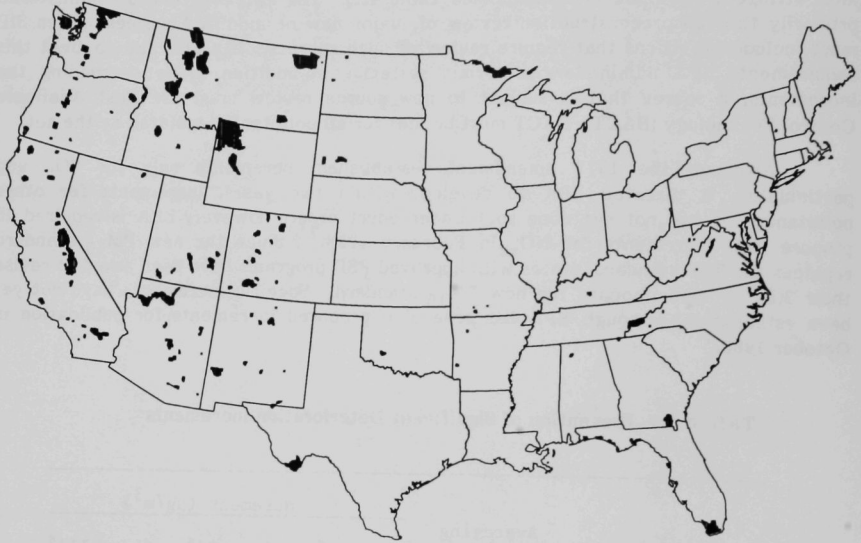


FIGURE 4.1 PSD Class I Areas

5 CURRENT ISSUES

5.1 PROPOSED AMENDMENTS TO THE CLEAN AIR ACT

Efforts in the first session of the 100th Congress to address the problems of O_3 and CO nonattainment were not completed, although two major legislative proposals to amend the Clean Air Act remained under consideration as it recessed: H.R. 3054, introduced by Rep. Henry Waxman, Chairman of the House Subcommittee on Health and the Environment, and S. 1894, reported out of the Senate Committee on Environment and Public Works. Since it was unable to complete legislative action in 1987, Congress postponed for eight months the imposition of sanctions against CO and O_3 nonattainment areas. This moratorium delays until August 31, 1988, EPA's authority to impose new construction bans.⁸ Congress will have to take action on Clean Air Act amendments before this interim legislation expires or economic sanctions will again be possible.

The nonattainment provisions of S. 1894 and H.R. 3054 are generally similar. The following is a summary of major CO and O_3 attainment provisions included in both bills. Both bills contain provisions to extend attainment deadlines for 3-15 years, depending on the severity of the pollution problem. Areas with longer extensions would be required to implement more numerous and stringent control measures. Among the added controls are minimum percentage emission reductions for the area and for major stationary sources; adoption of measures to offset growth in vehicle miles traveled; emission fees and penalties for stationary sources; and a requirement that emissions from major new pollution sources be offset 2-to-1 (or more) by reductions from other sources in the area. Both bills tighten and broaden pollution controls on stationary sources, impose controls on fuel volatility, and establish hydrocarbon limits on a variety of commercial and industrial sources of VOCs. To reduce the amount of O_3 transported into downwind areas from elsewhere, the proposals call for creating multistate O_3 transport regions where certain controls would be required. In addition, a number of provisions address motor vehicle emissions: enhanced automobile I&M programs, more-stringent tailpipe emission standards, and mandated use of clean-burning fuels in certain areas. The proposals also address gasoline vapor recovery through controls on new cars or at the pump.

5.2 EPA'S POST-'87 OZONE AND CARBON MONOXIDE ATTAINMENT STRATEGY

The 1977 amendments did not address post-1987 nonattainment issues. They stated simply that states either submit plans that provide for attainment by the end of 1987 or face plan disapproval, imposition of sanctions, and federal plan promulgations. Given EPA estimates that approximately 20 areas require an additional 50% reduction in emissions to meet the ozone NAAQS, strict adherence to the statutory language should result in control measures that carry some severe economic and social impacts. EPA recently reasoned that, while acknowledging the potential for "draconian measures," the Congress in 1977 nevertheless wanted to pressure the states to make maximum progress toward meeting the fixed deadlines and to "leave the task of making adjustments to a future Congress."⁹

With no congressional action imminent, in November 1987 EPA published its policy on how it intends to bring these nonattainment areas into compliance with the NAAQS.¹⁰ Under this policy, states are expected to submit, by the spring of 1990, new plans that demonstrate attainment within three to five years, depending on the severity of the problem. In addition, the SIP attainment strategies developed by the states must result in an annual average emissions reduction of at least 3% (beyond certain baseline measures) until the standards are attained. Areas that cannot demonstrate attainment in the near term (within 3 years and, for some areas, 5 years of a SIP's approval by EPA) will be subject to construction moratoriums on new sources and must show a minimum annual average emissions reduction of 3% to avoid further sanctions.

EPA has begun the process of disapproving those pending 1982 SIPs for extension areas, as well as SIP revisions submitted by nonextension areas in response to earlier SIP calls, that do not demonstrate attainment by a fixed near-term deadline. A construction ban would apply in both cases. Beyond applying sanctions to address planning failures, EPA plans to audit current state SIPs to determine if they have been fully implemented and, in the case of conditional approvals, if all relevant conditions have been satisfied. A construction moratorium may be imposed where a state is not carrying out its existing SIP. Under EPA's proposed policy, additional funding sanctions (for highway projects, sewage treatment facilities, and state air quality efforts) would only apply if an area fails to make reasonable efforts to submit an adequate plan or to implement an existing plan.

EPA expects to publish a final policy on the correction of O₃ and CO plans by early 1988. Shortly thereafter, EPA will take final action on its proposal to disapprove the various pending SIPs and will issue calls for states to revise their SIPs. Only if states fail to adequately respond to this SIP call will they be subject to sanctions. It is unlikely that the congressional moratorium will have any effect on this effort, as the moratorium will expire before SIP revisions are due.

5.3 CURRENT AND FUTURE EPA REGULATORY ACTIVITY

A major focus of EPA's ozone control program is fuel volatility. Proposed volatility limits on gasoline, published August 19, 1987 (52 Fed. Reg. 31,162), are expected to reduce VOC emissions by 8%, the largest reduction achievable from any available control measure.¹¹ The volatility restrictions would only apply to gasoline sold during the "ozone season" -- from May 16 through September 15. The restrictions are based on existing voluntary standards developed by the American Society for Testing and Materials, which specify fuel volatility levels for five climate areas of the country.

Other proposed regulations included in the August 19 rulemaking would require automakers to equip new cars with canisters for recovering vapors during fueling. The refueling regulations would impose an emission limit of 0.10 gram of vapor per gallon of fuel dispensed. The level of control is based on the expected effectiveness of on-board controls. These controls comprise a fuel intake tube that forms an airtight seal and an activated charcoal canister to trap the vapors. There has been considerable debate over the use of on-board controls versus fuel pump controls. EPA chose the former because of its greater effectiveness (90% vs. 66%) even though on-board equipment will take several

years to produce benefits. The refueling controls will reduce VOC emissions by an estimated 2%.¹¹

EPA estimates that the ongoing replacement of older cars with newer, cleaner vehicles will reduce VOC emissions by 20%. When combined with the expected benefits of the proposed regulations, the 30% VOC reduction should bring one-half of current O₃ nonattainment areas into compliance.¹¹

In early 1988, EPA will propose PSD regulations for NO_x, including the establishment of allowable increments for Class I, II, and III areas. In late 1988, EPA will propose PSD regulations for PM₁₀. As described in Sec. 4, the PSD program is administered through the preconstruction review of major new or modified sources and requires the application of best available control technology (BACT).

6 DATA DESCRIPTION

6.1 CONTENTS OF APPENDIXES

This final section describes the data tables and maps given in the appendixes for each state. The appendixes are grouped in order by federal region, and data are presented alphabetically by state within each region. The material given for each state includes the following:

1. Tables and maps of nonattainment areas.
2. Summary of State Implementation Plan.
3. List of PSD areas and a map of PSD Class I areas.
4. A map of counties within each state.
5. General SO_2 and particulate-matter emission limits.
6. Unit-specific SO_2 emission limits for utility generating plants.

These items are described in detail below, in the same order as they appear in the appendixes.

6.2 SUMMARY OF AIR QUALITY ATTAINMENT

The county nonattainment designations as of December 31, 1981, and December 31, 1987, are compared in the first two tables of each state section (see, for example, Tables IV.1 and IV.2). This comparison for TSP, SO_2 , CO, O_3 , and NO_x is broken down further in the sections labeled improvement and deterioration. Improvement is indicated when a county's attainment designation changed from primary nonattainment to either secondary nonattainment or full attainment, or from secondary nonattainment to attainment. Deterioration is indicated when a county's designation changed from complete attainment to either primary or secondary nonattainment, or from secondary to primary nonattainment. In cases where multiple redesignations have occurred, the greatest improvement (from primary nonattainment) or greatest deterioration (to primary nonattainment) is indicated. A footnote of explanation about the new fine particulate standard (PM_{10}) and the number of PM_{10} Group I and Group II counties has been added to the TSP column of the first table of each state.

A brief summary of the approval status of the SIP is also included. This SIP information was gathered from the regional offices of the EPA. If the plan for a certain pollutant is approved in some areas but not in others, a note has been added to direct the reader's attention to the specific SIP summary.

6.3 NONATTAINMENT AREAS

Following the air quality attainment summary is a county-level nonattainment table. This table of "P's and W's" illustrates the state nonattainment problem in more detail (see, for example, Table IV.2). Partial- and whole-county nonattainment for 1981 and 1987 is presented side-by-side, allowing for quick inspection of the improvement or degradation in air quality realized since December 1981. These nonattainment designations are, again, only those on which EPA has taken final action.

Maps of nonattainment areas outline the county and subcounty areas that violated the NAAQS as of December 31, 1987. These maps were generated from the same source of information used to create the county-level nonattainment table mentioned above. These areas were sketched as accurately as possible, following the area designations that were given in the Federal Register. Although the standard for particulates was changed on July 1, 1987 (effective July 31, 1987), maps for nonattainment of the TSP standard are presented because the PM₁₀ Group I and II areas are newly designated and SIPs providing for attainment of this new standard have not yet been submitted.⁴ A list of these Group I and II areas is presented in Sec. 2.

6.4 SIP ATTAINMENT STRATEGIES

The Clean Air Act requires states with nonattainment areas to submit a SIP that outlines proposed strategies for attaining the NAAQS. Revised SIPs include the following data for nonattainment areas: an emission inventory, emission limits on existing sources, a procedure for new-source review, and a strategy for attainment of the NAAQS by some statutory deadline.

The SIP synopses given in this report summarize the plans submitted to the EPA by each state. These summaries were prepared from information gathered from individual SIPs at the EPA regional offices. Nonattainment (NA) areas for the particular pollutant are listed as contained in the SIP -- cities, counties, or air basins. The type of violation is indicated under the NA heading -- primary (P) or secondary (S) nonattainment. The date the plan was formally submitted to EPA is given, along with the action taken by EPA -- approved (A); conditionally approved (C); disapproved (D); incomplete (I); or under review (R). An indication of the sources that contribute to the area's nonattainment difficulties and an explanation of the strategy for bringing the area into attainment concludes each SIP synopsis.

6.5 PREVENTION OF SIGNIFICANT DETERIORATION (PSD) AREAS

The PSD Class I areas and areas that cannot be redesignated as Class III are managed by one of the following federal land managers: U.S. Forest Service, National Park Service, U.S. Fish and Wildlife Service, or the Bureau of Land Management. These land managers provided Argonne with lists of areas that meet the requirements set forth in the Clean Air Act for designation as PSD areas. The PSD table includes a list of Class I, recommended Class I, and mandatory Class II areas (also called areas that cannot be redesignated as Class III, or Class II floor areas). The name of the particular area and its acreage are included in the table.

6.6 EMISSION LIMITS FOR FUEL CONSUMPTION

The SO_2 and particulate matter emission limits from fossil-fuel combustion are summarized in the table of general emission limits. These limits were updated according to information obtained from the EPA.¹² The tables list sources (new and existing), fuel type (coal, oil, gas), and emission limit (usually by heat input).

6.7 POWER PLANT DATA

The emission limits for electric utility generating plants, in units of $\text{lb SO}_2/10^6 \text{ Btu}$, make up the final table for each state. The data in these tables were compiled by EPA and reviewed by the Energy Information Administration (EIA).¹³ The unit-specific data for fossil-fuel-fired electric generators are summarized and include the following: power plant name and unit ID number, the year the unit first began operation, the 1984 on-line status, and the capacity of the unit in megawatts (MW). The on-line status is footnoted for units not on line in 1984. Emission limit data for sources that burn coal, gas, or oil appear in the last four columns of the table. The limits are required either by SIPs or New Source Performance Standards (NSPS).

The equivalent annual average represents the lowest coal quality, in terms of annual sulfur emission rates (including rate reductions from a scrubber), that can be burned in the unit without violating the stated emission limit during the specified averaging period. This annual average is always less than or equal to the stated emission rate, depending on the coal type used and the length of the averaging period. In general, the greater the sulfur variability in the coal and the shorter the averaging period, the greater the difference between the stated coal limit and the equivalent annual limit (i.e., the more stringent the standard). Since the variability of sulfur in oil and gas is negligible, the stated limit and the equivalent annual limit for these fuels are the same.

The averaging period is the time during which emissions cannot exceed the stated limit. A source may exceed the stated emission limit for a short period, but cannot violate the limit when emissions are averaged over the entire period.

The appended emission-limit tables are missing data for some plants; either no limit exists for those units or the data were unavailable. Since Vermont and Idaho have very little electricity generation from fossil fuels, no data appear for these states.

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5. Code of Federal Regulations, Title 40, Parts 52.24(a) and (b).
6. *Federal Register*, Vol. 48, p. 50,686 (Nov. 2, 1983).
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12. Garvey, D.B., et al., *In Pursuit of Clean Air: A Data Book of Problems and Strategies at the State Level, 1982 Update*, Argonne National Laboratory Report ANL/EES-TM-212, four vols. (Aug. 1982).
13. The data base, prepared by E.H. Pechan and Associates, was taken from a computer file received from J. Greenwald, Regulation and Economic Analysis Division, U.S. Environmental Protection Agency, Washington, D.C. (Aug. 1986).

APPENDIXES VI THROUGH X:
STATE-SPECIFIC COUNTY DATA
BY FEDERAL REGION

IN ACCORDANCE WITH THE
STATE OF NEW YORK
GOVERNMENT

**APPENDIX VI,
FEDERAL REGION VI:**

**ARKANSAS
LOUISIANA
NEW MEXICO
OKLAHOMA
TEXAS**

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TABLE VI.1 Arkansas: Summary of Air-Quality Attainment

Air Quality Status	Pollutant				
	SO ₂ ^a	TSP ^{a,b}	CO	O ₃	NO _x
Attainment					
No. of Counties Containing NA Areas in 1981	0/0	0/0	0	1	0
No. of Counties Containing NA Areas in 1987	0/0	0/0	0	0	0
State Implementation Plan ^c	N/N	N/N	N	N	N
Improvement (1981 to 1987)					
No. of Counties that Changed from Primary NA to Secondary NA	0	0	d	d	d
No. of Counties that Changed from Secondary NA to Full Attainment	0	0	d	d	d
No. of Counties that Changed from Primary NA to Full Attainment	0	0	0	1	0
Total No. of Counties that Improved	0	0	0	1	0
Deterioration (1981 to 1987)					
No. of Counties that Changed from Secondary NA to Primary NA	0	0	d	d	d
No. of Counties that Changed from Full Attainment to Secondary NA	0	0	d	d	d
No. of Counties that Changed from Full Attainment to Primary NA	0	0	0	0	0
Total No. of Counties that Deteriorated	0	0	0	0	0

^aWhen two values given: Primary NA/Secondary NA.

^bTSP standard replaced by fine particulate standard (PM₁₀) on July 31, 1987. See Sec. 2 of the report summary for details on PM₁₀ and a full list of Group I and II areas. Arkansas: Group I counties = 0; Group II counties = 0.

^cA = Approved; C = Conditionally Approved; D = Disapproved; E = Extended Deadline; I = Incomplete; N = Not Required; R = Under Review; S = see SIP summary.

^dNo secondary standard exists for CO, O₃, or NO_x.

TABLE VI.2 Arkansas: Comparison of 1981 and 1987 County Nonattainment Designations^a

County Code	County	SO ₂				TSP				CO		O ₃		NO _x	
		Prim		Sec		Prim		Sec		Prim		Prim		Prim	
		81	87	81	87	81	87	81	87	81	87	81	87	81	87
5119	PULASKI													W	

^aP = part of county, W = whole county.

TABLE VI.3 Arkansas: PSD Class I Areas

Location ^a	Area Name	Acreage
1	Upper Buffalo Wilderness	9,912
2	Caney Creek Wilderness	14,344

^aSee Fig. VI.1.**TABLE VI.4 Arkansas: Recommended Class I Areas**

Area Name	Total Acreage	Acreage Already Class I
None		

TABLE VI.5 Arkansas: Areas That Cannot Be Reclassified as Class III

Area Name	Total Acreage	Acreage Already Class I
National Wildlife Refuges:		
Big Lake	11,036	-
Felsenthal	64,599	-
White River	112,399	-
National Recreation Area:		
Buffalo	94,219	-
National Wilderness Areas:		
East Fork	10,777	-
Flatside	10,105	-
Hurricane Creek	15,177	-
Leatherwood	16,956	-
Poteau Mountain	10,884	-
Richland Creek	11,822	-



FIGURE VI.1 Arkansas: PSD Class I Areas



FIGURE VI.2 Arkansas: Key to Counties

TABLE VI.6 Arkansas: SO_2 Emission Limits (lb $\text{SO}_2/10^6$ Btu) by Heat Input Class, Q, in Units of 10^6 Btu/hr

Sources	Fuel Type	Limit	
		$Q \leq 250^a$	$Q > 250^a$
New and Existing	All Fossil Fuels	b	b,c

^aTotal heat input based on unit design maximum.

^bEmission limit specific to individual source; must not exceed NAAQS.

^cSources with $Q > 250 \times 10^6$ Btu/hr, constructed after 8/17/71, must comply at least with NSPS, or with more stringent state standards.

TABLE VI.7 Arkansas: Particulate Matter Emission Limits (lb $\text{SO}_2/10^6$ Btu) by Fuel Input Class, P, in Units of lb of fuel/hr

Sources	Fuel Type	Limit ^a	
		$0 < P \leq 60,000^b$	$P > 60,000^b$
New ^c and Existing	Solid Fuel	$3.59P^{0.62}$	$17.31P^{0.16}$

^aMaximum limit of 1000 lb/day or 100 lb/hr per source.

^bPounds of fuel for the entire plant.

^cSources with $Q > 250 \times 10^6$ Btu/hr must comply at least with NSPS, or with more stringent state standards.

TABLE VI.8 Arkansas: SO₂ Emission Limits for Electrical Utility Generating Plants

Plant Name	Unit ID	Year on Line	Capacity (MW)	Emission Limits (lb/10 ⁶ Btu)			Averaging Period (hr)
				Stated Coal ^a	Equiv. Annual Avg. ^b	Oil/Gas	
ARKANSAS LIGNITE ^d	1 ^c	1990	800	1.20	1.13		720
ARKANSAS LIGNITE ^d	2 ^c	1992	800	1.20	1.13		720
BAILEY	1	1966	122				0.5
COUCH, HARVEY	1	1943	27				0.5
COUCH, HARVEY	2	1954	124				0.5
FITZHUGH	1	1963	59				0.5
FLINT CREEK ^d	1	1978	528	1.20	0.94		3
HOPE	1	1927	1				0.5
HOPE	2	1937	1				0.5
HOPE	3	1949	2				0.5
HOPE	4	1952	3				0.5
INDEPENDENCE ^d	1	1983	740	1.20	0.94		3
INDEPENDENCE ^d	2 ^c	1985	815	1.20	0.94		3
JONESBORO	4	1949	8				0.5
JONESBORO	5	1953	8				0.5
JONESBORO	6	1958	12				0.5
L CATHERINE	1	1950	45				0.5
L CATHERINE	2	1950	44				0.5
L CATHERINE	3	1953	97				0.5
L CATHERINE	4	1970	485				0.5
LYNCH, CECIL	1	1947	28				0.5
LYNCH, CECIL	2	1949	59				0.5
LYNCH, CECIL	3	1954	130				0.5
MC CLELLAN	1	1972	134				0.5
MOSES, HAM	1	1951	63				0.5
MOSES, HAM	2	1951	63				0.5
RITCHIE, R E	1	1961	295				0.5
RITCHIE, R E	2	1968	517				0.5
WHITE BLUFF ^d	1	1980	740	1.20	0.94		3
WHITE BLUFF ^d	2	1981	740	1.20	0.94		3

^aLimit as stated in regulations.^bEquivalent coal limit to account for variability of sulfur content.^cUnit not on line in 1984.^dNSPS unit.

TABLE VI.9 Louisiana: Summary of Air-Quality Attainment

Air Quality Status	Pollutant				
	SO ₂ ^a	TSP ^{a,b}	CO	O ₃	NO _x
Attainment					
No. of Parishes Containing NA Areas in 1981	0/0	0/0	0	19	0
No. of Parishes Containing NA Areas in 1987	0/0	0/0	0	19	0
State Implementation Plan ^c	N/N	N/N	N	S	N
Improvement (1981 to 1987)					
No. of Parishes that Changed from Primary NA to Secondary NA	0	0	d	d	d
No. of Parishes that Changed from Secondary NA to Full Attainment	0	0	d	d	d
No. of Parishes that Changed from Primary NA to Full Attainment	0	0	0	0	0
Total No. of Parishes that Improved	0	0	0	0	0
Deterioration (1981 to 1987)					
No. of Parishes that Changed from Secondary NA to Primary NA	0	0	d	d	d
No. of Parishes that Changed from Full Attainment to Secondary NA	0	0	d	d	d
No. of Parishes that Changed from Full Attainment to Primary NA	0	0	0	0	0
Total No. of Parishes that Deteriorated	0	0	0	0	0

^aWhen two values given: Primary NA/Secondary NA.

^bTSP standard replaced by fine particulate standard (PM₁₀) on July 31, 1987. See Sec. 2 of the report summary for details on PM₁₀ and a full list of Group I and II areas. Louisiana: Group I counties = 0; Group II counties = 0.

^cA = Approved; C = Conditionally Approved; D = Disapproved; E = Extended Deadline; I = Incomplete; N = Not Required; R = Under Review; S = see SIP summary.

^dNo secondary standard exists for CO, O₃, or NO_x.

TABLE VI.10 Louisiana: Comparison of 1981 and 1987 Parish Nonattainment Designations^a

Parish Code	Parish	SO ₂				TSP				CO		O ₃		NO _x	
		Prim		Sec		Prim		Sec		Prim		Prim		Prim	
		81	87	81	87	81	87	81	87	81	87	81	87	81	87
22005	ASCENSION											W	W		
22011	BEAUREGARD											W	W		
22015	BOSSIER											W	W		
22017	CADDO											W	W		
22019	CALCASIEU											W	W		
22033	EAST BATON ROUGE											W	W		
22043	GRANT											W	W		
22047	IBERVILLE											W	W		
22051	JEFFERSON											W	W		
22055	LAFAYETTE											W	W		
22057	LAFOURCHE											W	W		
22071	ORLEANS											W	W		
22077	POINTE COUPEE											W	W		
22087	ST BERNARD											W	W		
22089	ST CHARLES											W	W		
22093	ST JAMES											W	W		
22095	ST JOHN THE BAPTIST											W	W		
22101	ST MARY											W	W		
22121	WEST BATON ROUGE											W	W		

^ap = part of parish, W = whole parish.

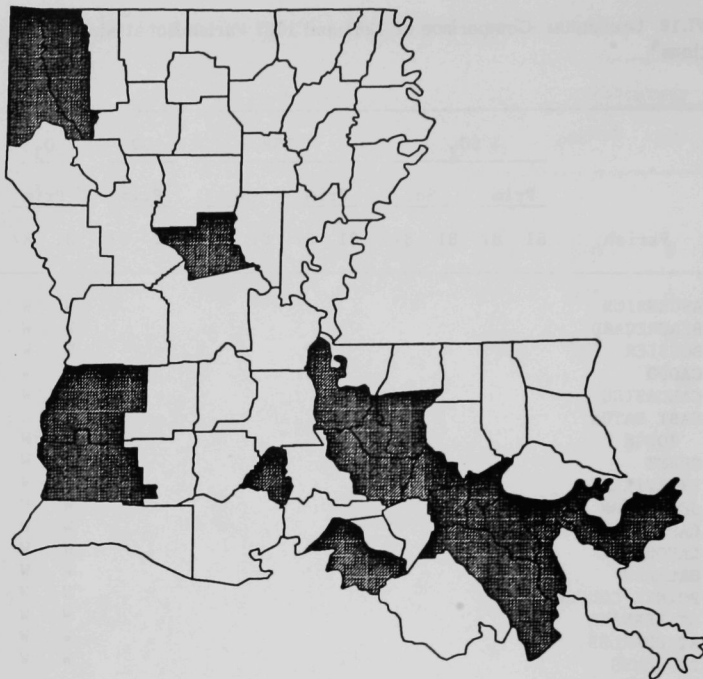


FIGURE VI.3 Louisiana: O₃ Nonattainment Areas as Designated in 1987

TABLE VI.11 Louisiana: Synopsis of SIP Attainment Strategies for Areas Currently in Violation of NAAQS

Area ^a	NA ^b	Plan Date	EPA Action ^c	Source(s)	Strategy ^d
<u>O₃</u> :					
19 parishes in state	P	4/79	C	Mobile; petroleum refineries	RACT on VOC sources; FMVECP
East and West Baton Rouge parishes	P	9/86	R	Mobile; Group III CTG sources	RACT on VOC sources; I&M; attainment by 12/87.

^aCities unless otherwise noted.

^bNonattainment violation indicated by pollutant and as P = primary and S = secondary.

^cA = Approved; C = Conditionally Approved; D = Disapproved; I = Incomplete; R = Under Review.

^dSee p. vii for a listing of the abbreviations.

TABLE VI.12 Louisiana: PSD Class I Area

Location ^a	Area Name	Acreage
1	Breton Wilderness	5,000 ^b

^aSee Fig. VI.4.

^bApproximate acreage; exact size not available.

TABLE VI.13 Louisiana: Recommended Class I Areas

Area Name	Total Acreage	Acreage Already Class I
None		

TABLE VI.14 Louisiana: Areas That Cannot Be Reclassified as Class III

Area Name	Total Acreage	Acreage Already Class I
National Wildlife Refuges:		
Bogue Chitto	17,803	-
D'Arbonne	17,420	-
Delta	48,799	-
Lacassine	31,124	-
Sabine	139,437	-
Upper Ouachita	20,905	-



FIGURE VI.4 Louisiana: PSD Class I Area



FIGURE VI.5 Louisiana: Key to Parishes

TABLE VI.15 Louisiana: SO₂ Emission Limits (ppm SO₂)^a by Heat Input Class, Q, in Units of 10⁶ Btu/hr

Sources	Fuel Type	Limit for Q > 0 ^{a,b}
New ^c and Existing	All Fuels	2,000

^aEmission limit is in parts per million (ppm) SO₂ by volume at standard conditions (i.e., gas at 21°C (70°F) and 29.92 inches of mercury).

^bTotal heat input based on actual unit operating rate, where the actual measurement is determined by the product of heating value of fuel and the quantity of fuel burned in tons/hr.

^cNew sources with Q > 250 x 10⁶ Btu/hr, constructed after 8/17/71, must comply at least with NSPS or with more stringent state standards.

TABLE VI.16 Louisiana: Particulate Matter Emission Limits (lb PM/10⁶ Btu) by Heat Input Class, Q, in Units of 10⁶ Btu/hr

Sources	Fuel Type	Limit for Q > 0
New ^a and Existing	All Fuels	0.6

^aSources with Q > 250 x 10⁶ Btu/hr must comply at least with NSPS, or with more stringent state standards.

TABLE VI.17 Louisiana: SO₂ Emission Limits for Electrical Utility Generating Plants

Plant Name	Unit ID	Year on Line	Capacity (MW)	Emission Limits (lb/10 ⁶ Btu)			Averaging Period (hr)
				Stated Coal ^a	Equiv. Annual Avg. ^b	Oil/Gas	
ARSENAL HILL	1 ^c	1938	15			3.00	3
ARSENAL HILL	2 ^c	1926	10			3.00	3
ARSENAL HILL	3 ^c	1927	11			3.00	3
ARSENAL HILL	4 ^c	1927	11			3.00	3
ARSENAL HILL	5	1960	113			3.00	e
BIG CAJUN 1	1	1972	109			3.00	3
BIG CAJUN 1	2	1972	109			3.00	3
BIG CAJUN 2 ^d	1	1982	540	1.20	0.94		3
BIG CAJUN 2 ^d	2	1982	540	1.20	0.94		3
BIG CAJUN 2 ^d	3	1984	540	1.20	0.94		3
BIG CAJUN 3 (OXBOW) ^d	1 ^c	1987	540	1.08	1.02		720
BIG CAJUN 4 (OXBOW) ^d	1		540	1.20	1.13		720
BIG CAJUN 4 (OXBOW) ^d	2		540	1.20	1.13		720
BIG CAJUN 4 (OXBOW) ^d	3		540	1.20	1.13		720
BIG CAJUN 4 (OXBOW) ^d	4		540	1.20	1.13		720
BR COAL ^d	1 ^c	1993	540	1.20			
COUGHLIN	1	1948	8			3.00	3
COUGHLIN	2	1948	8			3.00	3
COUGHLIN	3	1949	11			3.00	3
COUGHLIN	4	1952	24			3.00	3
COUGHLIN	5	1958	55			3.00	3
COUGHLIN	6	1961	112			3.00	3
COUGHLIN	7	1966	224			3.00	3
DOC BONIN	1	1964	57			3.00	3
DOC BONIN	2	1970	95			3.00	3
DOC BONIN	3	1977	195			3.00	3
DOLET HILLS ^d	1 ^c	1986	640	1.20	0.94		3
EAST ORLEANS	1 ^c	1989	750	1.20			3
EAST ORLEANS	2 ^c	1993	750	1.20			
HOUMA	14	1967	13			3.00	3
HOUMA	15	1972	26			3.00	3
HOUMA	16		44			3.00	3
HUNTER	1	1957	18			3.00	3
HUNTER	2	1957	18			3.00	3
HUNTER	3	1965	55			3.00	3

TABLE VI.17 Louisiana (Cont'd)

Plant Name	Unit ID	Year on Line	Capacity (MW)	Emission Limits (lb/10 ⁶ Btu)		Oil/ Gas	Averaging Period (hr)
				Stated Coal ^a	Equiv. Annual Avg. ^b		
HUNTER	4	1974	85			3.00	3
LIEBERMAN	1	1947	27			3.00	e
LIEBERMAN	2	1949	29			3.00	e
LIEBERMAN	3	1957	111			3.00	e
LIEBERMAN	4	1959	109			3.00	e
LITTLE GYPSY	1	1961	244			3.00	3
LITTLE GYPSY	2	1965	400			3.00	3
LITTLE GYPSY	3	1969	573			3.00	3
LOUISIANA	1	1930	12			3.00	3
LOUISIANA	2	1930	12			3.00	3
LOUISIANA	3	1930	12			3.00	3
LOUISIANA	4	1938	15			3.00	3
LOUISIANA	5	1939	15			3.00	3
LOUISIANA	6	1943	15			3.00	3
LOUISIANA	7	1950	45			3.00	3
LOUISIANA	8	1950	45			3.00	3
LOUISIANA	9	1953	64			3.00	3
LOUISIANA	1A	1951	15			3.00	3
LOUISIANA	2A	1954	42			3.00	3
LOUISIANA	3A	1954	42			3.00	3
MARKET STREET	11	1938	36			3.00	3
MARKET STREET	12	1943	36			3.00	3
MARKET STREET	13	1952	31			3.00	3
MICHOUD	1	1957	113			3.00	3
MICHOUD	2	1963	244			3.00	3
MICHOUD	3	1967	548			3.00	3
MINDEN	1	1966	13			3.00	3
MINDEN	2	1968	13			3.00	3
MONROE	5	1946	6			3.00	3
MONROE	6	1950	8			3.00	3
MONROE	7	1951	8			3.00	3
MONROE	8	1956	8			3.00	3
MONROE	10	1961	25			3.00	3
MONROE	11	1965	38			3.00	3
MONROE	12	1968	75			3.00	3

TABLE VI.17 Louisiana (Cont'd)

Plant Name	Unit ID	Year on Line	Capacity (MW)	Emission Limits (lb/10 ⁶ Btu)		Oil/ Gas	Averaging Period (hr)
				Stated Coal ^a	Equiv. Annual Avg. ^b		
MORGAN CITY	1	1963	6			3.00	3
MORGAN CITY	2	1963	6			3.00	3
MORGAN CITY	3	1970	20			3.00	3
NATCHITOCHES	8	1962	6			3.00	3
NATCHITOCHES	9	1966	13			3.00	3
NATCHITOCHES	10	1972	27			3.00	3
NELSON, R S	1	1959	100			3.00	3
NELSON, R S	2	1959	111			3.00	3
NELSON, R S	3	1960	162			3.00	3
NELSON, R S	4	1970	515			0.80	3
NELSON, R S ^d	5 ^c	1990	540	1.20	0.94		3
NELSON, R S ^d	6	1982	540	1.20	0.94		3
NELSON, R S ^d	7	1982	90			0.35	
NINE MILE POINT	1	1951	74			3.00	3
NINE MILE POINT	2	1953	107			3.00	3
NINE MILE POINT	3	1955	125			3.00	3
NINE MILE POINT	4	1971	710			3.00	3
NINE MILE POINT	5	1973	763			3.00	3
OPELOUSAS	1	1965	13			3.00	3
OPELOUSAS	2	1970	27			3.00	3
PATERSON, A B	1	1947	46			3.00	3
PATERSON, A B	2	1948	44			3.00	3
PATERSON, A B	3	1950	56			3.00	3
PATERSON, A B	4	1954	87			3.00	3
PLAQUEMINE	2	1963	23			3.00	3
POWER HOUSE 2	1	1913	6			3.00	3
POWER HOUSE 2	3	1940	15			3.00	3
POWER HOUSE 2	4	1951	20			3.00	3
RODEMACHER	1	1975	450			3.00	3
RODEMACHER	1	1951	5			3.00	3
RODEMACHER ^d	2	1982	530				3
RODEMACHER	2	1951	5			3.00	3
RODEMACHER	3	1956	13			3.00	3
RODEMACHER	4	1959	27			3.00	3
RUSTON	1	1963	13			3.00	3

TABLE VI.17 Louisiana (Cont'd)

Plant Name	Unit ID	Year on Line	Capacity (MW)	Emission Limits (lb/10 ⁶ Btu)			Averaging Period (hr)
				Stated Coal ^a	Equiv. Annual Avg. ^b	Oil/Gas	
RUSTON	2	1968	28			3.00	3
RUSTON	3	1974	40			3.00	3
STERLINGTON	5	1943	44			3.00	3
STERLINGTON	6	1958	210			3.00	3
TECHE	1	1953	23			3.00	3
TECHE	2	1956	49			3.00	3
TECHE	3	1971	359			3.00	3
THIBODOUX	1	1968	19			3.00	3
WATERFORD	1	1975	410			3.00	3
WATERFORD	2	1976	411			3.00	3
WILLOW GLEN	1	1960	146			3.00	3
WILLOW GLEN	2	1964	220			3.00	3
WILLOW GLEN	3	1968	580			0.80	3
WILLOW GLEN	4	1973	522			0.80	3
WILLOW GLEN	5	1976	550			0.80	3
WILTON ^c	1	1990	800				
WILTON ^c	2	1992	800				

^aLimit as stated in regulations.

^bEquivalent coal limit to account for variability of sulfur content.

^cUnit not on line in 1984.

^dNSPS unit.

^eLimit never to be exceeded on annual basis.

TABLE VI.18 New Mexico: Summary of Air-Quality Attainment

Air Quality Status	Pollutant				
	SO ₂ ^a	TSP ^{a,b}	CO	O ₃	NO _x
Attainment					
No. of Counties Containing NA Areas in 1981	2/0	4/0	2	1	0
No. of Counties Containing NA Areas in 1987	1/0	2/0	1	0	0
State Implementation Plan ^c	C/C	S/N	A	N	N
Improvement (1981 to 1987)					
No. of Counties that Changed from Primary NA to Secondary NA	0	0	d	d	d
No. of Counties that Changed from Secondary NA to Full Attainment	0	0	d	d	d
No. of Counties that Changed from Primary NA to Full Attainment	1	2	1	1	0
Total No. of Counties that Improved	1	2	1	1	0
Deterioration (1981 to 1987)					
No. of Counties that Changed from Secondary NA to Primary NA	0	0	d	d	d
No. of Counties that Changed from Full Attainment to Secondary NA	0	0	d	d	d
No. of Counties that Changed from Full Attainment to Primary NA	0	0	0	0	0
Total No. of Counties that Deteriorated	0	0	0	0	0

^aWhen two values given: Primary NA/Secondary NA.

^bTSP standard replaced by fine particulate standard (PM₁₀) on July 31, 1987. See Sec. 2 of the report summary for details on PM₁₀ and a full list of Group I and II areas. New Mexico: Group I counties = 1; Group II counties = 5.

^cA = Approved; C = Conditionally Approved; D = Disapproved; E = Extended Deadline; I = Incomplete; N = Not Required; R = Under Review; S = see SIP summary.

^dNo secondary standard exists for CO, O₃, or NO_x.

TABLE VI.19 New Mexico: Comparison of 1981 and 1987 County Nonattainment Designations^a

County Code	County	SO ₂				TSP				CO		O ₃		NO _x	
		Prim		Sec		Prim		Sec		Prim		Prim		Prim	
		81	87	81	87	81	87	81	87	81	87	81	87	81	87
35001	BERNALILLO					P	P			W	W		P		
35013	DONA ANA									P					
35015	EDDY					P									
35017	GRANT	P	P			P	P								
35025	LEA					P									
35045	SAN JUAN	P													

^aP = part of county, W = whole county.

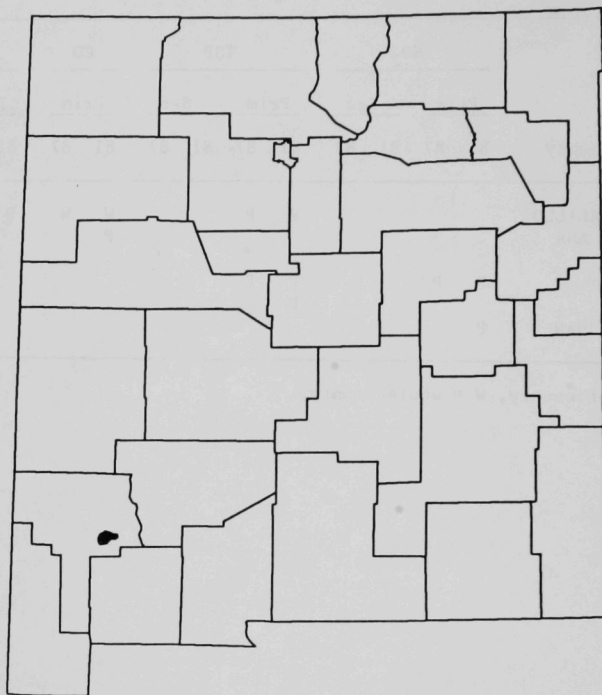


FIGURE VI.6 New Mexico: SO₂ Nonattainment Areas as Designated in 1987

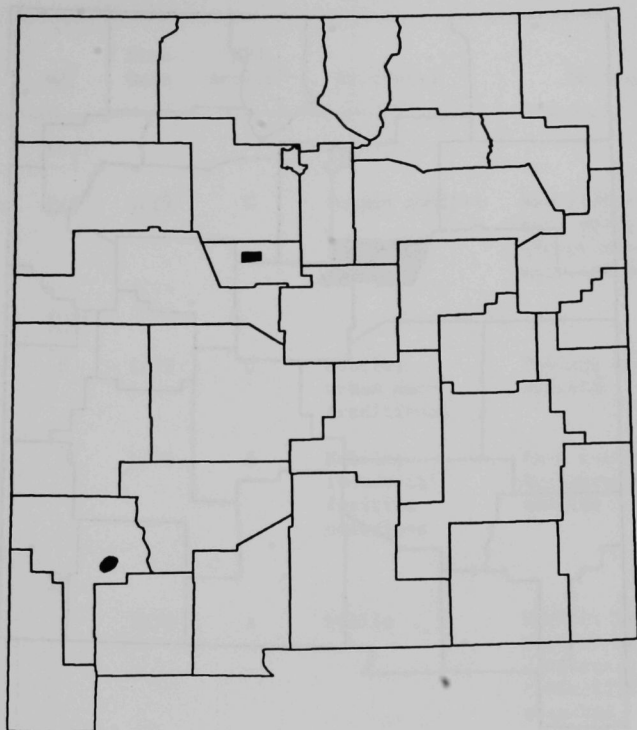


FIGURE VI.7 New Mexico: TSP Nonattainment Areas as Designated in 1987

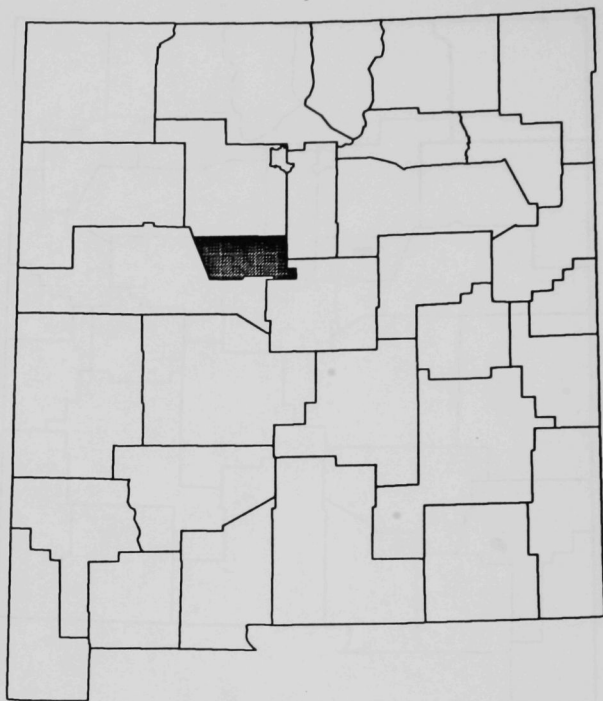


FIGURE VI.8 New Mexico: CO Nonattainment Areas as Designated in 1987

TABLE VI.20 New Mexico: Synopsis of SIP Attainment Strategies for Areas Currently in Violation of NAAQS

Area ^a	NA ^b	Plan Date	EPA Action ^c	Source(s)	Strategy ^d
<u>SO₂:</u>					
Grant County	P/S	1/79	C	Copper smelter	New limits, using multipoint rollback; exemption order approved by EPA 8/81
<u>TSP:</u>					
Albuquerque	P	1/79	C	Mobile; urban non-traditional	Paving, cleaning streets
Grant County	P	1/79	A	Mobile; industrial fugitive emissions	Pave roads; control fugitive emissions at smelter
<u>CO:</u>					
Albuquerque	P	1/79	A	Mobile	FMVECP; I&M; attainment by 1987, under sanctions, 176(a) and 110(a)(2)(I) 316(b) - proposed

^aCities unless otherwise noted.

^bNonattainment violation indicated by pollutant and as P = primary and S = secondary.

^cA = Approved; C = Conditionally Approved; D = Disapproved; I = Incomplete; R = Under Review.

^dSee p. vii for a listing of the abbreviations.

TABLE VI.21 New Mexico: PSD Class I Areas

Location ^a	Area Name	Acreage
1	San Pedro Parks Wilderness	41,132
2	Wheeler Peak Wilderness	6,027
3	Bandelier Wilderness	23,267
4	Pecos Wilderness	167,416
5	Bosque del Apache Wilderness	60,850
6	White Mountain Wilderness	31,171
7	Salt Creek Wilderness	8,500
8	Gila Wilderness	433,690
9	Carlsbad Caverns National Park	46,755

^aSee Fig. VI.9.

TABLE VI.22 New Mexico: Recommended Class I Areas

Area Name	Total Acreage	Acreage Already Class I
Bandelier National Monument	36,971	23,267
Capulin Mountain National Monument	775	-
El Morro National Monument	1,279	-
Gila Cliff Dwellings National Monument	533	-
White Sands National Monument	145,733	-

TABLE VI.23 New Mexico: Areas That Cannot Be Reclassified as Class III

Area Name	Total Acreage	Acreage Already Class I
National Historical Park:		
Chaco Culture	33,974	-
National Monuments:		
Bandelier	36,971	23,267
White Sands	144,733	-
National Wild and Scenic Rivers:		
Rio Grande	16,880	-
National Wildlife Refuges:		
Bitter Lake	23,350	8,500
Bosque del Apache	57,191	60,850
San Andreas	57,217	-
Sevilleta	228,968	-
National Wilderness Areas:		
Aldo Leopold	211,300	-
Apache Kid	45,000	-
Blue Range	30,000	-
Capitan Mountains	34,000	-
Chama River Canyon	50,300	-
Cruces Basin	18,000	-
Gila	140,000	433,690
Latir Peak	20,000	-
Manzano Mountain	37,195	-
Pecos	55,000	167,416
Sandia Mountain	30,930	-
Wheeler Peak	14,700	6,027
White Mountain	16,860	31,171
Withington	19,000	-

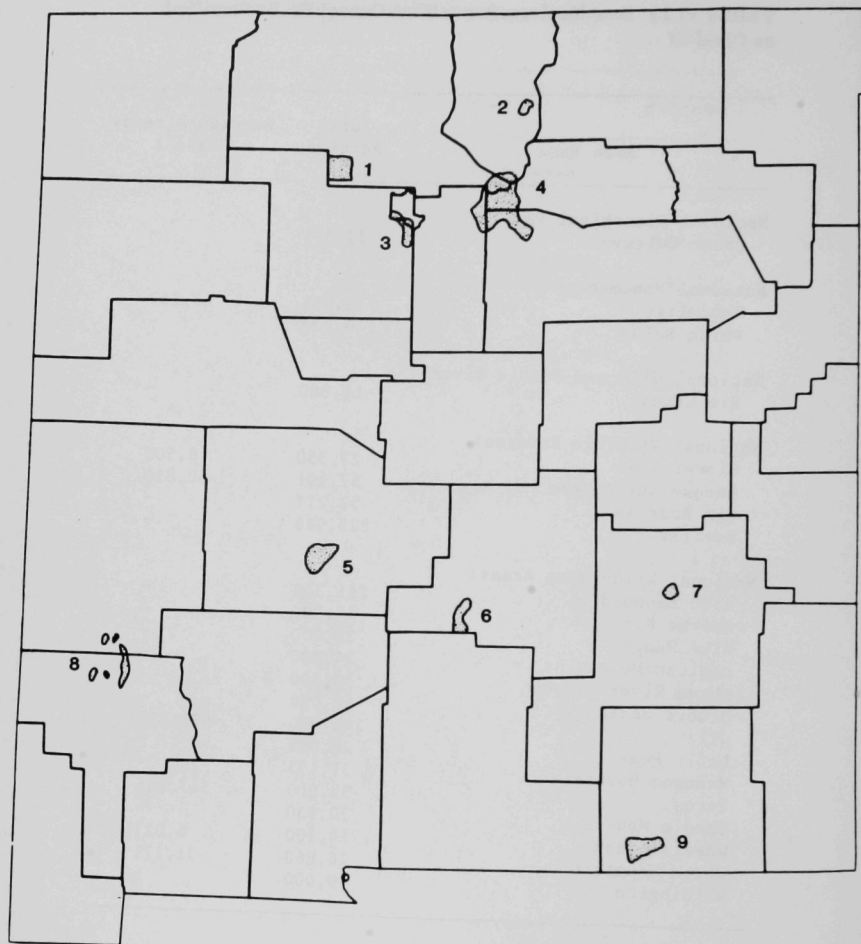


FIGURE VI.9 New Mexico: PSD Class I Areas

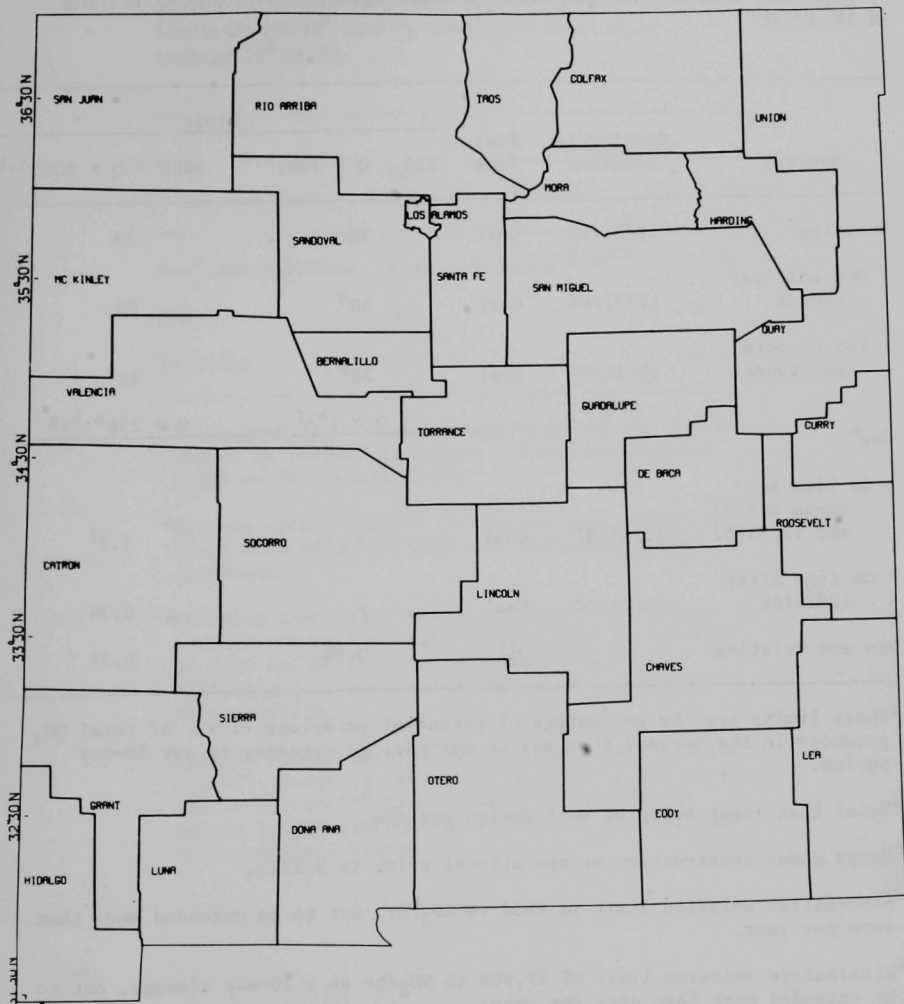


FIGURE VL10 New Mexico: Key to Counties

TABLE VI.24 New Mexico: SO₂ Emission Limits by Heat Input Class, Q, in Units of 10⁶ Btu/hr

Sources	Compliance Deadline	Fuel Type	Limit	
			250 < Q ≤ 3000 ^{a,b}	3000 < Q < 5000 ^{a,b}
Existing ^c	12/31/82	Coal	50	28
One unit per source	12/31/84	Coal	40 ^d	28
Two or more per source	12/31/84	Coal	28 ^e	28 ^e
			Q > 1 ^{b,f}	Q > 250 ^{b,f,g}
New ^h				
On line between 9/1/71 and 12/31/82	12/31/82	Coal	-	1.2 ⁱ
On line after 12/31/82	12/31/82	Coal	-	0.34
New and Existing	-	Oil	0.34	0.34

^aThese limits are the percentage of potential emissions (i.e., of total SO₂ produced in the burner) that may be emitted, on average, in any 30-day period.

^bTotal heat input based on unit design maximum.

^cUnits under construction or operational prior to 9/1/71.

^dAlternative emission limit is 6000 lb SO₂/hr, not to be exceeded more than once per year.

^eAlternative emission limit of 17,900 lb SO₂/hr as a 30-day average, not to be exceeded more than once per year.

^fEmission limit expressed as lb SO₂/10⁶ Btu.

^gOr units with more than 25 MW generating capacity.

^hNew sources with Q > 250 × 10⁶ Btu/hr, constructed after 9/1/71, must comply at least with NSPS or with more stringent state standards.

ⁱAn additional limit applies of 0.55 lb SO₂/10⁶ Btu, averaged over a 30-day period.

TABLE VI.25 New Mexico: Particulate Matter Emission Limits (lb PM/10⁶ Btu) for Heat Input Class, Q, in Units of 10⁶ Btu/hr

Source Type	Fuel Type	Limit	
		Q ≤ 250 ^a	Q > 250 ^a
New ^b and Existing	Coal	0.9614Q ^{-0.2347}	0.5 ^c
New	Oil	-	0.3
Existing	Oil	-	0.5

^aTotal heat input based on aggregate of all fuels burned in individual units; allowable emissions based on individual plant.

^bSources with Q > 250 x 10⁶ Btu/hr must comply at least with NSPS, or with more stringent state standards.

^cEmission limit also restricts emissions of fine particulate matter (i.e., smaller than 2 microns) to 0.02 lb/10⁶ Btu from sources built after 6/9/78, and to 0.04 lb/10⁶ Btu from sources built before 6/9/78.

^dApplies to oil-burning units generating steam and electric power for off-site use. Limit for on-site use is 0.2 lb/10⁶ Btu for sources constructed before 1/1/50 and 0.1 lb/10⁶ Btu for sources constructed after 1/1/50.

TABLE VI.26 New Mexico: SO₂ Emission Limits for Electrical Utility Generating Plants

Plant Name	Unit ID	Year on Line	Capacity (MW)	Emission Limits (lb/10 ⁶ Btu)			Averaging Period (hr)
				Stated Coal ^a	Equiv. Annual Avg. ^b	Oil/Gas	
ALGODONES	1	1954	16				
ALGODONES	2	1954	16				
ALGODONES	3	1959	16				
ANIMAS	1	1955	3			0.34	1
ANIMAS	2	1955	3			0.34	1
ANIMAS	3	1958	8			0.34	1
ANIMAS	4	1959	15			0.34	1
CARLSBAD	2	1946	8				
CARLSBAD	3	1949	18				
CARLSBAD	4	1952	20				
CUNNINGHAM	1	1957	75				1
CUNNINGHAM	2	1965	200				1
ESCALANTE ^d	1	1984	210				720
ESCALANTE ^d	2 ^c	1988	210				720
FOUR CORNERS	1	1963	175	0.50	0.47	0.34	720
FOUR CORNERS	2	1963	177	0.50	0.47	0.34	720
FOUR CORNERS	3	1964	220	0.50	0.47	0.34	720
FOUR CORNERS	4	1969	800	0.50	0.47	0.34	720
FOUR CORNERS	5	1970	790	0.50	0.47	0.34	720
LORDSBURG	3	1949	12				
LORDSBURG	4	1968	18				
MADDOX	1	1967	118			0.34	1
NEW MEXICO ^d	1 ^c	1990	472	0.34	0.26		1
NEW MEXICO ^d	2 ^c	1993	472	0.34	0.26		1
NEW MEXICO ^d	3 ^c	1995	472	0.34	0.26		1
NEW MEXICO ^d	4 ^c	1998	472	0.34	0.26		1
NORTH LOVINGTON	S1	1962	16				1
NORTH LOVINGTON	S2	1966	33				1
PERSON	1	1952	22				1
PERSON	2	1953	22				0
PERSON	3	1954	35				
PERSON	4	1957	35				
PRAGER	7	1945	6				
PRAGER	8	1947	5				
PRAGER	9	1948	11				

TABLE VI.26 New Mexico (Cont'd)

Plant Name	Unit ID	Year on Line	Capacity (MW)	Emission Limits (lb/10 ⁶ Btu)			Averaging Period (hr)
				Stated Coal ^a	Equiv. Annual Avg. ^b	Oil/Gas	
REEVES	1	1960	50				
REEVES	2	1959	50				
REEVES	3	1962	75				
RIO GRANDE	1 ^c	1930	13				
RIO GRANDE	2 ^c	1929	13				
RIO GRANDE	3	1949	19				
RIO GRANDE	4	1951	34				
RIO GRANDE	5	1954	32				
RIO GRANDE	6	1957	47				
RIO GRANDE	7	1958	47				
RIO GRANDE	8	1972	147			0.34	1
ROSEWELL	5	1941	6				
ROSEWELL	6	1950	20				
SAN JUAN ^d	1	1976	326	0.65	0.61	0.34	720
SAN JUAN	2	1973	330	1.20	1.13	0.34	720
SAN JUAN ^d	3	1979	468	0.65	0.61	0.34	720
SAN JUAN ^d	4	1982	468	0.65	0.61	0.34	720
SANTA FE	1	1949	6				
SANTA FE	2	1951	6				
TA-3-1	1		20				

^aLimit as stated in regulations.^bEquivalent coal limit to account for variability of sulfur content.^cUnit not on line in 1984.^dNSPS unit.

TABLE VI.27 Oklahoma: Summary of Air-Quality Attainment

Air Quality Status	Pollutant				
	SO ₂ ^a	TSP ^{a,b}	CO	O ₃	NO _x
Attainment					
No. of Counties Containing NA Areas in 1981	0/0	3/0	1	2	0
No. of Counties Containing NA Areas in 1987	0/0	2/0	0	1	0
State Implementation Plan ^c	N/N	A/N	N	I	N
Improvement (1981 to 1987)					
No. of Counties that Changed from Primary NA to Secondary NA	0	0	d	d	d
No. of Counties that Changed from Secondary NA to Full Attainment	0	0	d	d	d
No. of Counties that Changed from Primary NA to Full Attainment	0	1	1	1	0
Total No. of Counties that Improved	0	1	1	1	0
Deterioration (1981 to 1987)					
No. of Counties that Changed from Secondary NA to Primary NA	0	0	d	d	d
No. of Counties that Changed from Full Attainment to Secondary NA	0	0	d	d	d
No. of Counties that Changed from Full Attainment to Primary NA	0	0	0	0	0
Total No. of Counties that Deteriorated	0	0	0	0	0

^aWhen two values given: Primary NA/Secondary NA.

^bTSP standard replaced by fine particulate standard (PM₁₀) on July 31, 1987. See Sec. 2 of the report summary for details on PM₁₀ and a full list of Group I and II areas. Oklahoma: Group I counties = 0; Group II counties = 1.

^cA = Approved; C = Conditionally Approved; D = Disapproved; E = Extended Deadline; I = Incomplete; N = Not Required; R = Under Review; S = see SIP summary.

^dNo secondary standard exists for CO, O₃, or NO_x.

TABLE VI.28 Oklahoma: Comparison of 1981 and 1987 County Nonattainment Designations^a

County Code	County	SO ₂				TSP				CO		O ₃		NO _x	
		Prim		Sec		Prim		Sec		Prim		Prim		Prim	
		81	87	81	87	81	87	81	87	81	87	81	87	81	87
40097	MAYES					P	P								
40109	OKLAHOMA					P						W			
40143	TULSA					P	P			P		W	W		

^ap = part of county, W = whole county.

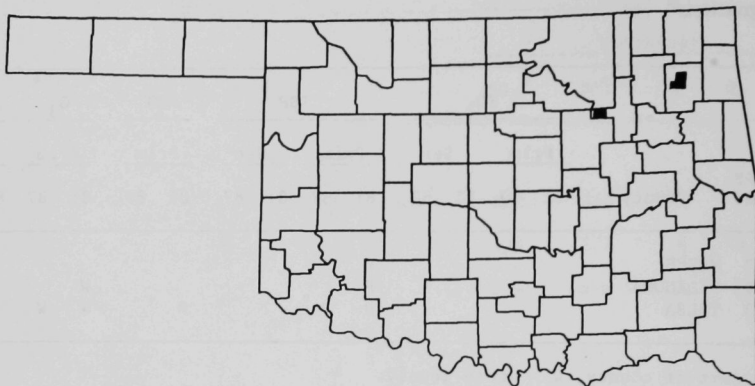


FIGURE VI.11 Oklahoma: TSP Nonattainment Areas as Designated in 1987

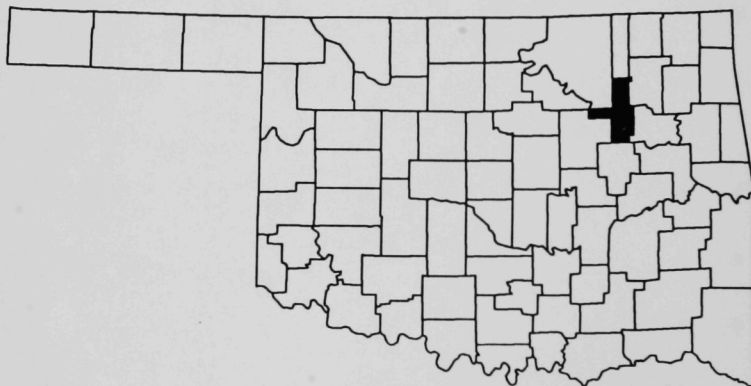


FIGURE VI.12 Oklahoma: O₃ Nonattainment Areas as Designated in 1987

TABLE VI.29 Oklahoma: Synopsis of SIP Attainment Strategies for Areas Currently in Violation of NAAQS

Area ^a	NA ^b	Plan Date	EPA Action ^c	Source(s)	Strategy ^d
<u>TSP:</u>					
Mayes and Tulsa counties	P	4/79	A	Mobile	Pave selected roads in rural areas; clean streets in urban areas
<u>CO:</u>					
Oklahoma County	P	10/85	I	Mobile	I&M; FMVECP; attainment by 1988
<u>O₃:</u>					
Tulsa County	P	2/85	I ^e	Mobile, stationary	I&M; FMVECP; attainment by 1988

^aCities unless otherwise noted.

^bNonattainment violation indicated by pollutant and as P = primary and S = secondary.

^cA = Approved; C = Conditionally Approved; D = Disapproved; I = Incomplete; R = Under Review.

^dSee p. vii for a listing of the abbreviations.

^eAwaiting resubmittal of the plan.

Table VI.30 Oklahoma: PSD Class I Areas

Location ^a	Area Name	Acreage
1	Wichita Mountains Wilderness	8,900

^aSee Fig. VI.13.**TABLE VI.31 Oklahoma: Recommended Class I Areas**

Area Name	Total Acreage	Acreage Already Class I
None		

TABLE VI.32 Oklahoma: Areas That Cannot Be Reclassified as Class III

Area Name	Total Acreage	Acreage Already Class I
National Wildlife Refuges:		
Salt Plains	31,996	-
Sequoyah	20,800	-
Tishomingo	16,464	-
Wichita Mountains	59,019	8,900

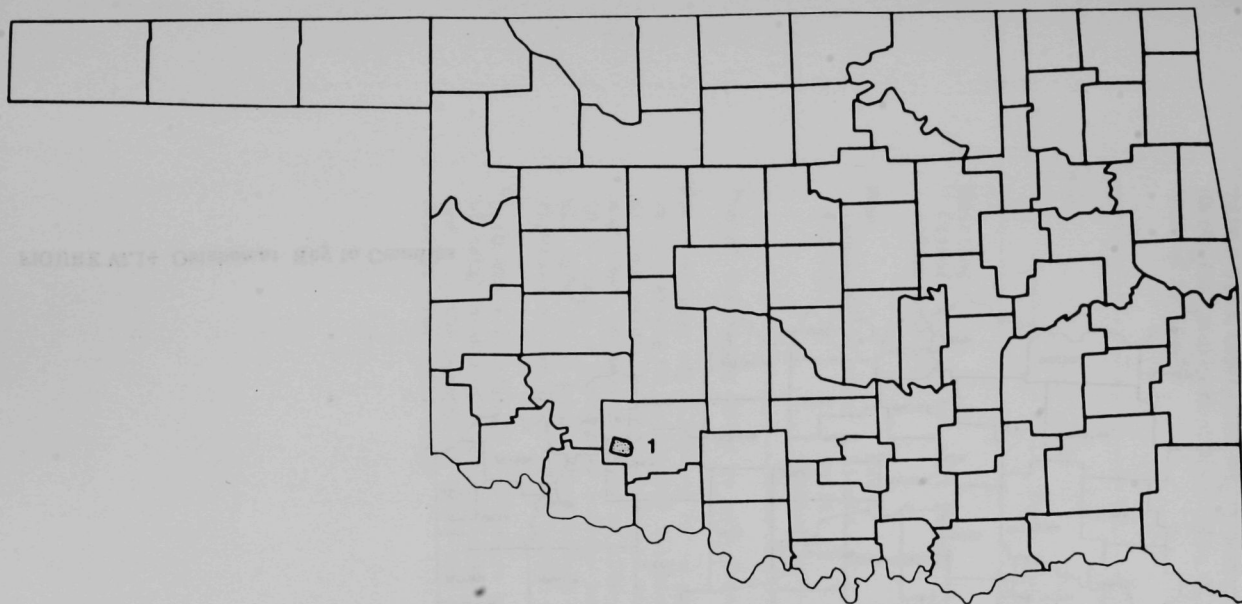


FIGURE VI.13 Oklahoma: PSD Class I Areas

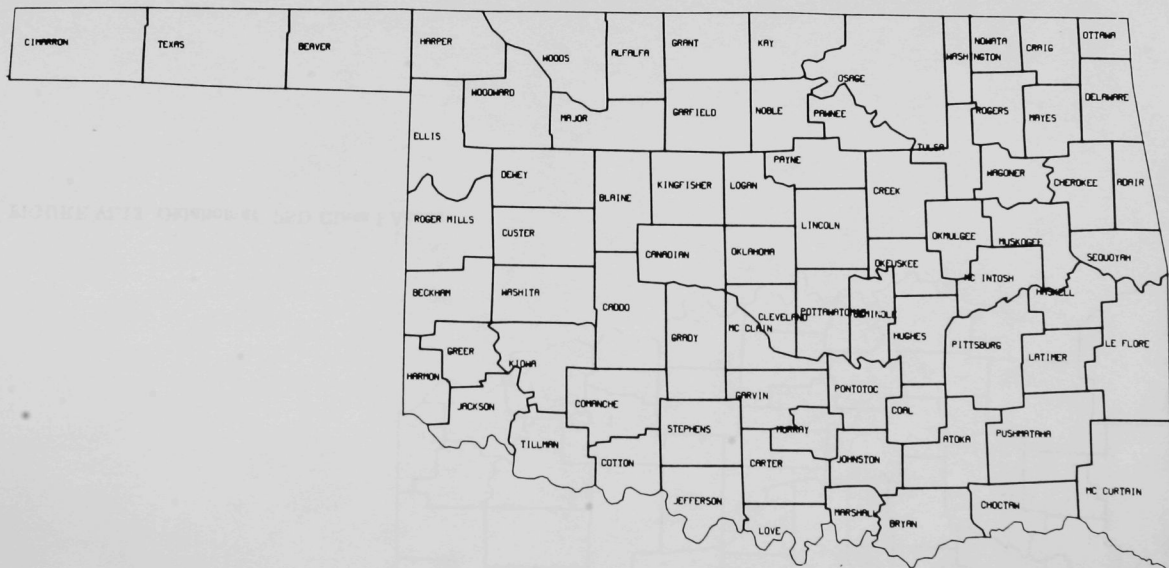


FIGURE VI.14 Oklahoma: Key to Counties

TABLE VI.33 Oklahoma: SO₂ Emission Limits
(lb SO₂/10⁶ Btu) by Heat Input Class, Q, in
Units of 10⁶ Btu/hr

Sources	Fuel Type	Limit
		Q > 0
Existing (constructed on or before 6/22/74)	All Fossil Fuels	b
New (constructed after 6/22/74)	Gas	0.2
	Liquid	0.8
	Solid	1.2
	Combination	c

^aTotal heat input based on unit design maximum.

^bSources must not suffer or allow any emission which results in an ambient air concentration of 1350 $\mu\text{g}/\text{m}^3$ (0.52 ppm) in five minutes of any hour, an hour exposure of 1200 $\mu\text{g}/\text{m}^3$ (0.46 ppm), a three-hour average exposure of 650 $\mu\text{g}/\text{m}^3$ (0.25 ppm), or a 24-hour average exposure of 130 $\mu\text{g}/\text{m}^3$ (0.05 ppm).

^c $[y(0.80) + z(1.2)]/(y + z)$; where y is percent of total heat input derived from liquid fuel, and z is the percent of total heat input derived from solid fuel.

TABLE VL34 Oklahoma: Particulate Matter Emission Limits (lb PM/10⁶ Btu) by Heat Input Class, Q, in Units of 10⁶ Btu/hr

Sources	Fuel Type	Limit		
		10 ≥ Q ^a	10 < Q < 10,000 ^a	Q ≥ 10,000 ^a
New ^b and Existing	All Fuels	0.6	$1.0903Q^{-0.2594}$	0.1
	Wood and Fossil Fuels	0.6	c	c

^aTotal heat input based on design maxima of individual units; allowable emissions based on individual unit.

^bSources with $Q > 250 \times 10^6$ Btu/hr must comply at least with NSPS, or with more stringent state standards.

^cAny new (as of March 11, 1978) combined waste-wood and fossil-fuel fired steam-generating unit of a designed capacity $Q > 250 \times 10^6$ Btu/hr shall not emit more than 1 pound of particulate matter per 10⁶ Btu.

TABLE VI.35 Oklahoma: SO₂ Emission Limits for Electrical Utility Generating Plants

Plant Name	Unit ID	Year on Line	Capacity (MW)	Emission Limits (lb/10 ⁶ Btu)			Averaging Period (hr)
				Stated Coal ^a	Equiv. Annual Avg. ^b	Oil/Gas	
ANADARKO	1	1953	15				
ANADARKO	2	1953	15				
ANADARKO	3	1959	46				
ARBUCKLE	1	1953	74				
BELLE ISLE	1	1930	26				
BELLE ISLE	2	1943	21				
BOOMER LAKE	1	1956	10				
BOOMER LAKE	2	1959	13				
CHOUTEAU	1	1942	5				
CHOUTEAU	2	1942	5				
CHOUTEAU	3	1942	5				
CHOUTEAU	4	1942	5				
CHOUTEAU	5	1950	10				
CHOUTEAU	6	1951	20				
COMANCHE	1	1974	210				
GRDA ^d	1	1981	490	1.20	0.93		1
GRDA ^d	2 ^c	1985	520	1.20	1.13		720
HORSESHOE LAKE	1	1924	14				
HORSESHOE LAKE	2	1927	21				
HORSESHOE LAKE	3	1928	29				
HORSESHOE LAKE	4	1947	11				
HORSESHOE LAKE	5	1923	13				
HORSESHOE LAKE	6	1958	181				
HORSESHOE LAKE	8	1969	420				
HUGO ^d	1	1982	376	1.20	0.93		1
KINGFISHER	1	1946	1				
KINGFISHER	2	1964	1				
MOORELAND	1	1964	53				
MOORELAND	2	1968	135				
MOORELAND	3	1975	135				
MUSKOGEE	1	1924	8				
MUSKOGEE	2	1924	15				
MUSKOGEE	3	1956	185				
MUSKOGEE ^d	4	1977	515	1.20	0.93		1
MUSKOGEE ^d	5	1978	515	1.20	0.93		1
MUSKOGEE ^d	6	1984	515	1.20	0.93		1
MUSTANG	1	1950	60				1
MUSTANG	2	1951	56				1
MUSTANG	3	1955	114				1
MUSTANG	4	1959	273				1

TABLE VI.35 Oklahoma (Cont'd)

Plant Name	Unit ID	Year on Line	Capacity (MW)	Emission Limits (lb/10 ⁶ Btu)		Oil/ Gas	Averaging Period (hr)
				Stated Coal ^a	Equiv. Annual Avg. ^b		
NORTHEASTERN	1	1961	170				
NORTHEASTERN	2	1970	470				
NORTHEASTERN ^d	3	1979	450	1.20	0.93	0.80	1
NORTHEASTERN ^d	4	1980	450	1.20	0.93	0.80	1
OSAGE	1	1928	17				
OSAGE	2	1948	25				
PONCA STEAM ^d	2	1977	40				
RIVERSIDE	1	1974	455				
RIVERSIDE	2	1976	470				
SEMINOLE	1	1971	540				
SEMINOLE	2	1973	540				
SEMINOLE	3	1975	540				
SOONER ^d	1	1979	515	1.20	0.93		1
SOONER ^d	2	1980	515	1.20	0.93		1
SOONER ^d	3 ^c	1990	500	0.46	0.43		720
SOONER ^d	4 ^c	1991	500	0.46	0.43		720
SOUTHWESTERN	1	1952	80				
SOUTHWESTERN	2	1954	80				
SOUTHWESTERN	3	1967	310				
TULSA	1 ^c	1947	30				
TULSA	2	1956	165				
TULSA	3	1958	93				
TULSA	4	1958	165				
UNNAMED ^d	3 ^c	1991	500	1.20	1.13		720
WELEETKA	1 ^c	1928	24				
WELEETKA	2 ^c	1931	24				
WELEETKA	3 ^c	1950	30				
WELEETKA	4	1975	55				
WELEETKA	5	1976	55				
WELEETKA	6	1976	55				

^aLimit as stated in regulations.^bEquivalent coal limit to account for variability of sulfur content.^cUnit not on line in 1984.^dNSPS unit.

TABLE VI.36 Texas: Summary of Air-Quality Attainment

Air Quality Status	Pollutant				
	SO ₂ ^a	TSP ^{a,b}	CO	O ₃	NO _x
Attainment					
No. of Counties Containing NA Areas in 1981	0/0	5/4	1	12	0
No. of Counties Containing NA Areas in 1987	0/0	4/1	1	10	0
State Implementation Plan ^c	N/N	A	R	S	N
Improvement (1981 to 1987)					
No. of Counties that Changed from Primary NA to Secondary NA	0	0	d	d	d
No. of Counties that Changed from Secondary NA to Full Attainment	0	1	d	d	d
No. of Counties that Changed from Primary NA to Full Attainment	0	1	0	2	0
Total No. of Counties that Improved	0	2	0	2	0
Deterioration (1981 to 1987)					
No. of Counties that Changed from Secondary NA to Primary NA	0	0	d	d	d
No. of Counties that Changed from Full Attainment to Secondary NA	0	0	d	d	d
No. of Counties that Changed from Full Attainment to Primary NA	0	0	0	0	0
Total No. of Counties that Deteriorated	0	0	0	0	0

^aWhen two values given: Primary NA/Secondary NA.

^bTSP standard replaced by fine particulate standard (PM₁₀) on July 31, 1987. See Sec. 2 of the report summary for details on PM₁₀ and a full list of Group I and II areas. Texas: Group I counties = 1; Group II counties = 4.

^cA = Approved; C = Conditionally Approved; D = Disapproved; E = Extended Deadline; I = Incomplete; N = Not Required; R = Under Review; S = see SIP summary.

^dNo secondary standard exists for CO, O₃, or NO_x.

TABLE VI.37 Texas: Comparison of 1981 and 1987 County Nonattainment Designations^a

County Code	County	SO ₂				TSP				CO		O ₃		NO _x	
		Prim		Sec		Prim		Sec		Prim		Prim		Prim	
		81	87	81	87	81	87	81	87	81	87	81	87	81	87
48039	BRAZORIA											W	W		
48061	CAMERON					P	P	P							
48113	DALLAS					P						W	W		
48141	EL PASO					P	P	P		P	P	W	W		
48167	GALVESTON											W	W		
48183	GREGG											W	W		
48201	HARRIS					P	P	P	P			W	W		
48245	JEFFERSON											W	W		
48355	NUECES					P	P					W			
48361	ORANGE											W	W		
48439	TARRANT							P				W	W		
48453	TRAVIS											W			
48469	VICTORIA											W	W		

^aP = part of county, W = whole county.

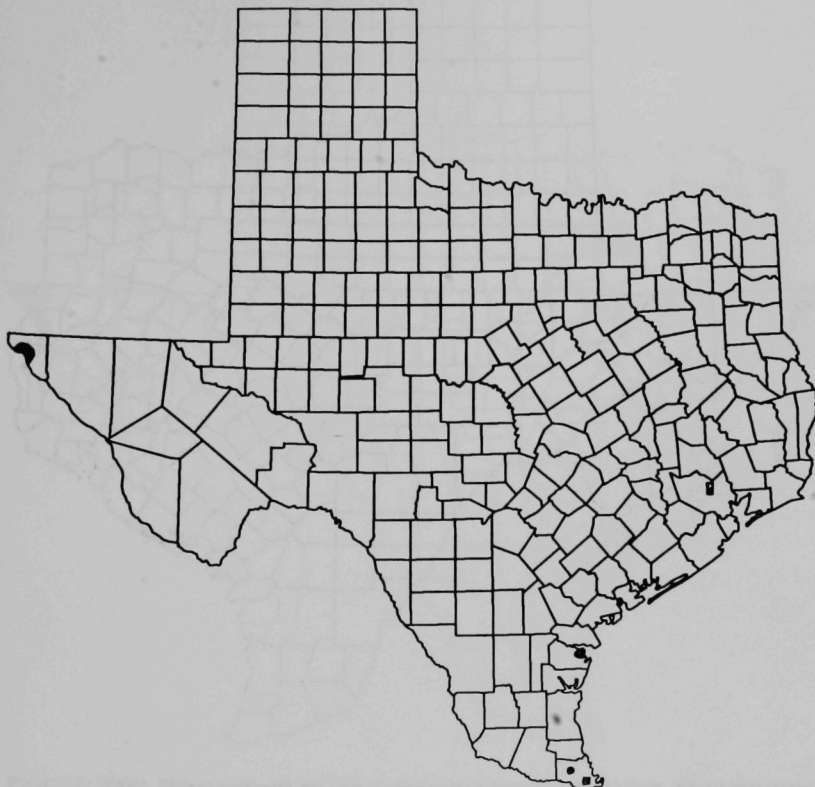


FIGURE VI.15 Texas: TSP Nonattainment Areas as Designated in 1987

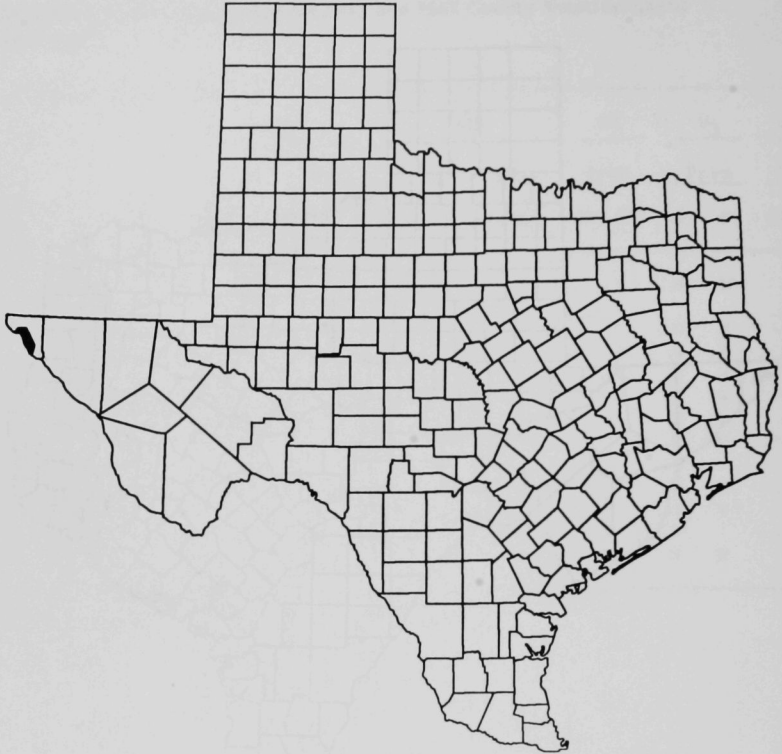


FIGURE VI.16 Texas: CO Nonattainment Areas as Designated in 1987

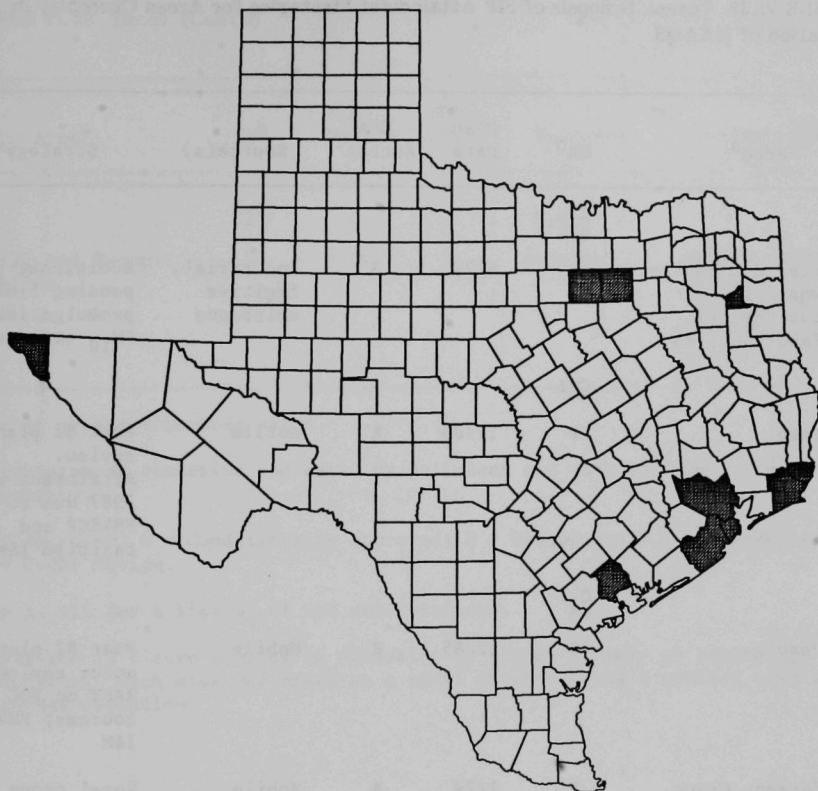


FIGURE VI.17 Texas: O₃ Nonattainment Areas as Designated in 1987

TABLE VI.38 Texas: Synopsis of SIP Attainment Strategies for Areas Currently in Violation of NAAQS

Area ^a	NA ^b	Plan Date	EPA Action ^c	Source(s)	Strategy ^d
<u>TSP:</u> ^e					
Harris, San Benito, Brownsville, Corpus Christi, El Paso counties	P	4/79	A	Industrial, fugitive emissions	Additional plans pending final promulgation of PM ₁₀ standard
<u>CO:</u>					
El Paso	P	12/85	R	Mobile	Post 82 plan review. Attainment by 1987 due to FMVECP and tailpipe I&M.
<u>O₃:</u>					
El Paso	P	12/85	R	Mobile	Post 82 plans under review. RACT on VOC sources; FMVECP; I&M
Jefferson, Gregg, Galveston, Orange, Brazoria, and Victoria counties	P	4/79	A	Mobile	Rural ozone areas with RACT on VOC sources
Harris County	P	7/85	A	Mobile, petroleum and petrochemical industries	RACT on VOC sources; FMVECP; TCM; I&M; attainment by 1987.

TABLE VI.38 Texas (Cont'd)

Area ^a	NA ^b	Plan Date	EPA Action ^c	Source(s)	Strategy ^d
<u>O₃:</u>					
Dallas and Tarrant counties	P	5/86	D	Mobile	RACT on VOC sources; FMVECP; I&M; proposed sanctions - construction ban

^aCities unless otherwise noted.

^bNonattainment violation indicated by pollutant and as P = primary and S = secondary.

^cA = Approved; C = Conditionally Approved; D = Disapproved; I = Incomplete; R = Under Review.

^dSee p. vii for a listing of the abbreviations.

^eTexas had 25 discrete areas in violation of either primary or secondary standards. Each area was drawn as a small circle around a monitor with a recorded violation.

TABLE VI.39 Texas: PSD Class I Areas

Location	Area Name	Acreage
1	Guadalupe Mountains National Park	76,293
2	Big Bend National Park	735,416

TABLE VI.40 Texas: Recommended Class I Areas

Area Name	Total Acreage	Acreage Already Class I
None		

TABLE VI.41 Texas: Areas That Cannot Be Reclassified as Class III

Area Name	Total Acreage	Acreage Already Class I
National Preserves:		
Big Thicket	85,774	-
National Recreation Areas:		
Amistad	57,292	-
Lake Meredith	44,978	-
National Wildlife Refuges:		
Anahuac	21,695	-
Aransas	73,828	-
Brazoria	10,407	-
Hazerman	11,320	-
Laguna Atasco	45,074	-
McFaddin	41,682	-
San Bernard	24,454	-
National Seashores:		
Padre Island	130,646	-
National Wilderness Areas:		
Upland Island	12,423	-

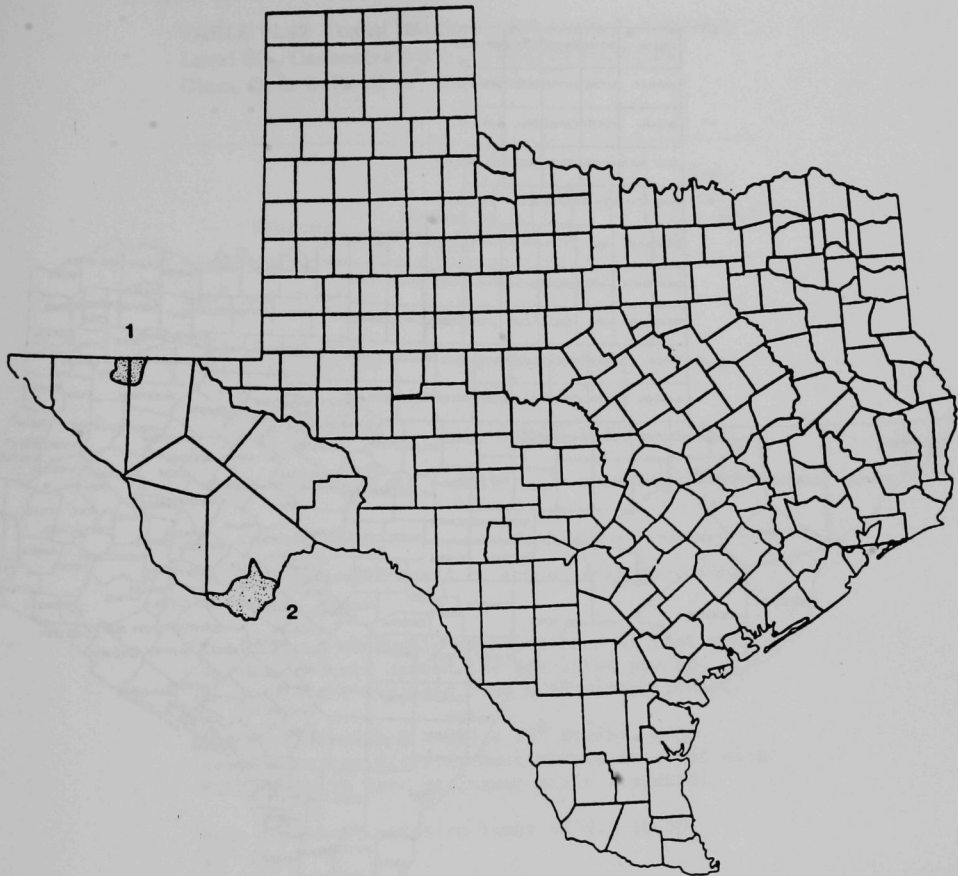


FIGURE VI.18 Texas: PSD Class I Areas

FIGURE VI.19 Texas: Key to Counties

TABLE VI.42 Texas: Maximum Allowable Net Ground-Level SO₂ Concentration (ppm SO₂) by Heat Input Class, Q, in Units of 10⁶ Btu/hr

Sources	Fuel Type	Limit for Q > 0 ^{a,b}
New ^b and Existing		
Galveston and Harris counties	All Fossil Fuels	0.28
Jefferson and Orange counties	All Fossil Fuels	0.32
Remainder of State	Coal	0.4 ^d
	Oil	0.4 ^e

^aTotal heat input based on actual unit operating rate.

^bThe maximum allowable emission rate is that rate which would not exceed the specified ppm SO₂ at ground level, averaged over a 30-minute period.

^cNew sources with Q > 250 x 10⁶ Btu/hr, constructed after 8/17/71, must comply at least with NSPS, or with more stringent state standards.

^dMust also meet emission limit of 3.0 lb SO₂/10⁶ Btu.

^eMust also meet emission limit of 440 ppm SO₂ by volume.

TABLE VI.43 Texas: Particulate Matter Emission Limits (lb PM/ 10^6 Btu) for Heat Input Class, Q, in Units of 10^6 Btu/hr

Sources ^d	Fuel Type	Limit for Q > 0 ^a
New ^b and Existing	Coal	0.3 ^c
	Oil	0.1 ^c

^aTotal heat input based on aggregate of all fuels burned in individual units.

^bSources with Q > 250×10^6 Btu/hr must comply at least with NSPS, or with more stringent state standards.

^cMaximum emission rate. If effective stack height of source is less than standard height, emission limit is adjusted. Sources are also limited to a maximum ground-level concentration of PM.

^dFor steam generation operations.

TABLE VI.44 Texas: SO₂ Emission Limits for Electrical Utility Generating Plants

Plant Name	Unit ID	Year on Line	Capacity (MW)	Emission Limits (lb/10 ⁶ Btu)			Averaging Period (hr)
				Stated Coal ^a	Equiv. Annual Avg. ^b	Oil/Gas	
ABILENE	3	1948	8				
ABILENE	4	1949	19				
BATES, J L	1	1958	74			0.66	1
BATES, J L	2	1960	110			0.66	1
BERTRON, SAM	1	1956	177			0.80	1
BERTRON, SAM	2	1958	177			0.80	1
BERTRON, SAM	3	1959	235			0.80	1
BERTRON, SAM	4	1960	235			0.80	1
BIG BROWN	1	1971	575	3.00	2.35		2
BIG BROWN	2	1972	575	3.00	2.35		2
BRAUNIG, V H	1	1966	200			0.66	1
BRAUNIG, V H	2	1968	220			0.66	1
BRAUNIG, V H	3	1970	390			0.66	1
BROWNSVILLE	4	1949	5				
BROWNSVILLE	5	1952	23				
BROWNSVILLE	6	1959	23				
BRYAN	1	1950	5			0.66	
BRYAN	2	1952	5			0.66	
BRYAN	3	1955	12			0.66	
BRYAN	4	1958	22			0.66	
BRYAN	5	1966	25			0.66	1
BRYAN	6	1969	50			0.66	1
CALVERAS ^d	1 ^c	1991	500	1.20	1.13		720
CALVERAS ^d	2 ^c	1993	500	1.20	1.13		720
CEDAR BAYOU	1	1970	750			0.80	3
CEDAR BAYOU	2	1972	750			0.80	3
CEDAR BAYOU	3	1974	750			0.80	1
CELANESE	2	1979	30				1
CLARKE, HIRAM	1	1943	44			0.80	1
CLARKE, HIRAM	2	1947	44			0.80	1
CLARKE, HIRAM	3	1950	82			0.80	1
CLARKE, HIRAM	4	1951	82			0.80	1
COLEMAN STANDBY	1	1941	1			0.66	1
COLEMAN STANDBY	2	1941	1			0.66	1
COLETTA CREEK ^d	1	1979	550	1.20	0.93		1

TABLE VI.44 Texas (Cont'd)

Plant Name	Unit ID	Year on Line	Capacity (MW)	Emission Limits (lb/10 ⁶ Btu)		Oil/ Gas	Averaging Period (hr)
				Stated Coal ^a	Equiv. Annual Avg. ^b		
COLETTO CREEK ^d	2 ^c	1993	700	0.39	0.37		720
COLLEGE STATION	1	1946	3			0.80	1
COLLEGE STATION	2	1936	1			0.80	1
COLLEGE STATION	3	1958	5			0.80	1
COLLEGE STATION	4	1965	13				
COLLIN	1	1955	153			0.66	1
CONCHO	3	1930	15			0.66	
CONCHO	4	1953	36			0.66	1
DALLAS	3	1954	75			0.66	1
DALLAS	9	1951	70			0.66	1
DANSBY	1	1978	100			0.66	1
DAVIS, BARNEY M	1	1974	325			0.66	1
DAVIS, BARNEY M	2	1976	312			0.66	1
DE CORDOVA	1	1975	775			0.66	1
DECKER CREEK	1	1970	325			0.66	1
DECKER CREEK ^d	2	1977	422			0.66	1
DEELY, J T ^d	1	1977	418	1.20	0.93	0.80	1
DEELY, J T ^d	2	1978	418	1.20	0.93	0.80	1
DEEPWATER	1	1924	18				
DEEPWATER	2	1924	18				
DEEPWATER	3	1927	23				
DEEPWATER	4	1929	35				
DEEPWATER	5	1932	12				
DEEPWATER	6	1931	31				
DEEPWATER	7	1955	177				
DEEPWATER	11 ^c	1937	6				
DEEPWATER	12 ^c	1937	4				
DEEPWATER	13 ^c	1948	12				
DENTON	1	1955	12			0.66	
DENTON	2	1955	12			0.66	
DENTON	3	1962	25			0.66	1
DENTON	4	1966	60			0.66	1
DENTON	5	1973	60			0.66	1
DENVER CITY	2	1946	11				
DENVER CITY	3	1948	20				

TABLE VI.44 Texas (Cont'd)

Plant Name	Unit ID	Year on Line	Capacity (MW)	Emission Limits (lb/10 ⁶ Btu)			Averaging Period (hr)
				Stated Coal ^a	Equiv. Annual Avg. ^b	Oil/Gas	
DENVER CITY	4	1955	50				
EAGLE MOUNTAIN	1	1954	115			0.66	1
EAGLE MOUNTAIN	2	1956	175			0.66	1
EAGLE MOUNTAIN	3	1971	375				
EAST PLANT	3	1930	12			0.66	1
EAST PLANT	4	1942	12			0.66	1
EAST PLANT	5	1951	39			0.66	1
FAYETTE ^d	1	1979	550	1.14	0.89	0.70	1
FAYETTE ^d	2	1980	550	1.14	0.89		1
FAYETTE ^d	3		400	1.20			
FAYETTE ^d	4		400	1.20			
FOREST GROVE ^d	1 ^c	1989	750	1.20	1.13		720
FORT PHANTOM	1	1974	155			0.66	1
FORT PHANTOM ^d	2	1977	200			0.66	1
GABLE STREET	6 ^c	1939	26			0.66	
GABLE STREET	7 ^c	1950	36			0.66	1
GIBBONS CREEK ^d	1	1983	400	1.20	1.13		720
GIBBONS CREEK ^d	2 ^c	1988	400	1.20	1.13		720
GRAHAM	1	1960	240				
GRAHAM	2	1969	375			0.66	1
GREENS BAYOU	1	1949	72			0.80	
GREENS BAYOU	2	1949	72			0.80	
GREENS BAYOU	3	1953	112			0.80	
GREENS BAYOU	4	1953	112			0.80	
GREENS BAYOU	5	1973	413			0.80	1
GREENVILLE	1	1966	18			0.66	
GREENVILLE	2	1969	25			0.66	1
GREENVILLE ^d	3	1977	42			0.66	1
HANDLEY	1	1948	45				
HANDLEY	2	1950	80				1
HANDLEY	3	1963	400				
HANDLEY	4	1976	425			0.66	1
HANDLEY	5	1977	425			0.66	1
HARRINGTON ^d	1	1976	317	1.20	0.93	0.66	1
HARRINGTON ^d	2	1978	317	1.20	0.93	0.66	1

TABLE VI.44 Texas (Cont'd)

Plant Name	Unit ID	Year on Line	Capacity (MW)	Emission Limits (lb/10 ⁶ Btu)			Averaging Period (hr)
				Stated Coal ^a	Equiv. Annual Avg. ^b	Oil/Gas	
HARRINGTON ^d	3	1980	338	1.20	0.93		1
HILL, LON C	1	1954	72				
HILL, LON C	2	1956	70				
HILL, LON C	3	1959	163				
HILL, LON C	4	1969	240				
HOLLY AVE	1	1965	48				
HOLLY AVE ^d	2	1978	53			0.66	1
HOLLY STREET	1	1960	100			0.66	1
HOLLY STREET	2	1964	100			0.66	1
HOLLY STREET	3	1966	165			0.66	1
HOLLY STREET	4	1974	190			0.66	1
JACKSONVILLE	1	1922	1				
JACKSONVILLE	2	1929	2				
JACKSONVILLE	3	1940	3				
JACKSONVILLE	4	1948	5				
JONES	1	1971	244			0.66	1
JONES	2	1974	244			0.66	1
JOSLIN, E S	1	1971	240			0.66	1
KNOX LEE	1	1950	36			0.66	e
KNOX LEE	2	1950	38			0.66	e
KNOX LEE	3	1952	36			0.66	e
KNOX LEE	4	1956	83			0.66	e
KNOX LEE	5	1974	351			0.66	e
LAKE CREEK	1	1953	87				
LAKE CREEK	2	1959	230			0.66	1
LAKE HUBBARD	1	1970	375			0.66	1
LAKE HUBBARD	2	1973	515			0.66	1
LAKE PAULINE	1	1928	19			0.66	
LAKE PAULINE	2	1951	27			0.66	
LAPALMA	3	1928	10				
LAPALMA	4	1947	23				
LAPALMA	5	1948	23				
LAPALMA	6	1970	150				
LAREDO	1	1951	36				
LAREDO	2	1955	36				

TABLE VI.44 Texas (Cont'd)

Plant Name	Unit ID	Year on Line	Capacity (MW)	Emission Limits (lb/10 ⁶ Btu)			Averaging Period (hr)
				Stated Coal ^a	Equiv. Annual Avg. ^b	Oil/Gas	
LAREDO	3	1975	105				
LEON CREEK	1	1949	26			0.66	1
LEON CREEK	2	1951	26			0.66	1
LEON CREEK	3	1953	59			0.66	1
LEON CREEK	4	1959	85			0.66	1
LEWIS CREEK	1	1970	265			0.66	1
LEWIS CREEK	2	1971	265			0.66	1
LIMESTONE ^d	1 ^c	1986	750	0.82	0.65		3
LIMESTONE ^d	2 ^c	1987	750	0.82	0.65		3
LONE STAR	1	1954	50			0.66	e
MALAKOFF ^d	1 ^c	1988	600	0.80	0.63		3
MALAKOFF ^d	2 ^c	1990	600	0.80	0.63		3
MARTIN LAKE	1	1977	750	1.20	0.93		1
MARTIN LAKE ^d	2	1978	750	1.20	0.93		1
MARTIN LAKE ^d	3	1979	750	1.20	0.93		1
MARTIN LAKE ^d	4 ^c	1991	750	1.20			
MILLER, R W	1	1968	75				
MILLER, R W	2	1972	116				
MILLER, R W	3	1975	200				
MISSION ROAD	1	1945	20			0.66	1
MISSION ROAD	2	1948	20			0.66	1
MISSION ROAD	3	1958	80			0.66	1
MONTICELLO	1	1974	575	3.00	2.35		2
MONTICELLO	2	1975	575	3.00	2.35		2
MONTICELLO ^d	3	1978	750	1.20	0.93		1
MOORE COUNTY	2	1950	20				
MOORE COUNTY	3	1954	50				
MORGAN CREEK	2	1950	22				
MORGAN CREEK	3	1952	44				
MORGAN CREEK	4	1954	70				1
MORGAN CREEK	5	1959	175			0.66	1
MORGAN CREEK	6	1966	500			0.66	1
MOUNTAIN CREEK	2	1945	33			0.66	1
MOUNTAIN CREEK	3	1949	70			0.66	1
MOUNTAIN CREEK	6	1956	115			0.66	1

TABLE VI.44 Texas (Cont'd)

Plant Name	Unit ID	Year on Line	Capacity (MW)	Emission Limits (lb/10 ⁶ Btu)			Averaging Period (hr)
				Stated Coal ^a	Equiv. Annual Avg. ^b	Oil/Gas	
MOUNTAIN CREEK	7	1958	125			0.66	1
MOUNTAIN CREEK	8	1967	550			0.66	1
NECHES	3	1928	27			0.66	1
NECHES	4	1949	46			0.66	1
NECHES	5	1951	66			0.64	1
NECHES	6	1952	66			0.64	1
NECHES	7	1956	111			0.61	1
NECHES	8	1959	111			0.61	1
NEUCES BAY	3	1942	16			0.66	1
NEUCES BAY	4	1943	16			0.66	1
NEUCES BAY	5	1949	34			0.66	1
NEUCES BAY	6	1965	175			0.66	1
NEUCES BAY	7	1972	325			0.66	1
NEWMAN	1	1960	82			0.56	1
NEWMAN	2	1963	86			0.56	1
NEWMAN	3	1966	106			0.56	1
NEWMAN, C E	1	1957	7			0.66	
NEWMAN, C E	2	1957	7			0.66	
NEWMAN, C E	3	1960	17			0.66	
NEWMAN, C E	4	1961	17			0.66	
NEWMAN, C E	5	1960	41			0.66	1
NICHOLS	1	1960	106				
NICHOLS	2	1962	106				
NICHOLS	3	1968	244				
NORTH LAKE	1	1959	175			0.66	1
NORTH LAKE	2	1961	175			0.66	1
NORTH LAKE	3	1964	350			0.66	1
NORTH MAIN STREET	0 ^c	1922	24				
NORTH MAIN STREET	1 ^c	1919	24			0.66	
NORTH MAIN STREET	4	1952	80			0.66	1
NORTH TEXAS	1	1958	18				
NORTH TEXAS	2	1958	18				
NORTH TEXAS	3	1963	40				
OAK CREEK	1	1962	81			0.66	1
OKLAUNION ^d	1 ^c	1987	640	0.50	0.47		720

TABLE VI.44 Texas (Cont'd)

Plant Name	Unit ID	Year on Line	Capacity (MW)	Emission Limits (lb/10 ⁶ Btu)			Averaging Period (hr)
				Stated Coal ^a	Equiv. Annual Avg. ^b	Oil/Gas	
OKLAUNION ^d	2 ^c	1997	640	0.50	0.47		720
OLINGER, RAY	1	1967	71			0.66	1
OLINGER, RAY	2	1971	110			0.66	1
OLINGER, RAY	3	1976	138			0.66	1
PAINT CREEK	1	1953	34				
PAINT CREEK	2	1954	34				
PAINT CREEK	3	1959	53			0.66	1
PAINT CREEK	4	1971	110			0.66	1
PARISH, W A	1	1958	177			0.80	1
PARISH, W A	2	1958	177			0.80	1
PARISH, W A	3	1961	278			0.80	1
PARISH, W A	4	1968	565			0.80	1
PARISH, W A ^d	5	1977	660	1.20	0.94		3
PARISH, W A ^d	6	1979	660	1.20	0.94		3
PARISH, W A ^d	7	1980	570	1.20	0.94		3
PARISH, W A ^d	8	1983	540	0.36	0.28		3
PARKDALE	1	1953	87			0.66	1
PARKDALE	2	1955	115			0.66	1
PARKDALE	3	1957	125			0.66	1
PEARSALL	1	1961	25			0.66	1
PEARSALL	2	1961	25			0.66	1
PEARSALL	3	1961	25			0.66	1
PERMIAN BASIN	1 ^c	1948	13				
PERMIAN BASIN	2 ^c	1948	13				
PERMIAN BASIN	3 ^c	1949	13				
PERMIAN BASIN	4 ^c	1949	13				
PERMIAN BASIN	5	1958	115				
PERMIAN BASIN	6	1973	540			0.66	1
PIRKEY ^d	1	1984	640	1.20	0.94		3
PLANT X	2	1953	106			0.66	1
PLANT X	3	1955	106			0.66	1
PLANT X	4	1964	200			0.66	1
PLANT 2	3	1949	8				
PLANT 2	4	1952	12				
PLANT 2	5	1953	12				

TABLE VI.44 Texas (Cont'd)

Plant Name	Unit ID	Year on Line	Capacity (MW)	Emission Limits (lb/10 ⁶ Btu)			Averaging Period (hr)
				Stated Coal ^a	Equiv. Annual Avg. ^b	Oil/Gas	
PLANT 2	6	1957	23				
PLANT 2	7	1959	23				
POAGE	1	1950	11				
POAGE	2	1952	11				
RAYBURN, SAM	3	1965	26				
RIO PECOS	5	1959	36				
RIO PECOS	6	1969	95				
RIVER CREST	1	1954	110			0.66	1
ROBINSON, P H	1	1966	441				
ROBINSON, P H	2	1967	441				
ROBINSON, P H	3	1968	565				
ROBINSON, P H	4	1966	750			0.80	3
SABINE	1	1962	230			0.66	1
SABINE	2	1962	230			0.66	1
SABINE	3	1966	430			0.66	1
SABINE	4	1974	568			0.66	1
SABINE	5	1979	480			0.80	3
SAN ANGELO	2	1966	103			0.66	1
SAN MIGUEL ^d	1	1981	400	1.20	0.93		1
SANDOW ^d	4	1981	545	1.20	0.93		1
SEAHOLM	5	1951	20			0.66	1
SEAHOLM	6	1951	20			0.66	
SEAHOLM	7	1955	20			0.66	
SEAHOLM	8	1955	20			0.66	
SEAHOLM	9	1958	40			0.66	1
SIM GIDEON	1	1965	140			0.66	1
SIM GIDEON	2	1968	140				
SIM GIDEON	3	1972	340			0.66	1
SOMMERS, O W	1	1972	400			0.66	1
SOMMERS, O W	2	1974	400			0.66	1
SPS ^d	6 ^c	1989	600	1.20			
STRYKER CREEK	1	1958	175			0.66	1
STRYKER CREEK	2	1965	500			0.66	1
T. C. FERGUSON	1	1974	430				
TEXAS ^d	1 ^c	1993	300	1.20	1.13		720

TABLE VI.44 Texas (Cont'd)

Plant Name	Unit ID	Year on Line	Capacity (MW)	Emission Limits (lb/10 ⁶ Btu)			Averaging Period (hr)
				Stated Coal ^a	Equiv. Annual Avg. ^b	Oil/Gas	
TEXAS ^d	2 ^c	1995	300	1.20	1.13		720
TEXAS ^d	3 ^c	1997	300	1.20	1.13		720
TOLK ^d	1	1982	508	1.20	0.93		1
TOLK ^d	2 ^c	1985	508	1.20			
TRADINGHOUSE CREEK	1	1970	565			0.66	1
TRADINGHOUSE CREEK	2	1972	775			0.66	1
TRINIDAD	5	1949	70				
TRINIDAD	6	1965	240			0.66	1
TUTTLE, W B	1	1954	59				
TUTTLE, W B	2	1956	80			0.66	1
TUTTLE, W B	3	1961	85				
TUTTLE, W B	4	1963	140				
TWIN OAKS ^d	1 ^c	1988	750	1.20			
TWIN OAKS ^d	2 ^c	1990	750	1.20			
UNKNOWN ^d	3 ^c	1989	690	1.20	1.13		720
UNNAMED ^d	X ^c	1987	0	1.20	1.13		720
UNNAMED ^d	X ^c	1990	400	1.20			
UNNAMED ^d	2 ^c	1988	0	1.20	1.13		720
UNNAMED ^d	2 ^c	1988	600	1.20	1.13		720
UNNAMED ^d	3 ^c	1989	600	1.20	1.13		720
UNNAMED ^d	3 ^c	1988	600	1.20	1.13		720
UNNAMED ^d	4 ^c	1989	600	1.20	1.13		720
UNNAMED ^d	5 ^c	1989	600	1.20	1.13		720
UNNAMED ^d	6 ^c	1989	600	1.20	1.13		720
UNSITED ^d	3 ^c	1996	600	1.20	1.13		720
UNSITED ^d	4 ^c	1998	600	1.20	1.13		720
VALLEY	1	1962	175				
VALLEY	2	1967	550			0.66	1
VALLEY	3	1971	375				
VICTORIA	3	1952	36				
VICTORIA	4	1955	73				
VICTORIA	5	1963	170				
VICTORIA	6	1968	240				
WEBSTER	1	1954	112				
WEBSTER	2	1954	112				

TABLE VI.44 Texas (Cont'd)

Plant Name	Unit ID	Year on Line	Capacity (MW)	Emission Limits (lb/10 ⁶ Btu)			
				Stated Coal ^a	Equiv. Annual Avg. ^b	Oil/Gas	Averaging Period (hr)
WEBSTER	3 ^c	1964	375				
WELSH ^d	1	1977	528	1.20	0.94	0.80	3
WELSH ^d	2	1980	528	1.20	0.94		3
WELSH ^d	3	1982	528	1.20	0.94		3
WHARTON, T H	1	1958	71				
WHARTON, T H	2	1960	234				
WICHITA FALLS	6 ^c	1949	13				
WICHITA FALLS	7 ^c	1949	13				
WILKES	1	1964	177			0.66	e
WILKES	2	1970	351			0.66	e
WILKES	3	1971	351			0.66	e

^aLimit as stated in regulations.

^bEquivalent coal limit to account for variability of sulfur content.

^cUnit not on line in 1984.

^dNSPS unit.

^eLimit never to be exceeded on annual basis.

**APPENDIX VII,
FEDERAL REGION VII:**

**IOWA
KANSAS
MISSOURI
NEBRASKA**

TABLE VII.1 Iowa: Summary of Air-Quality Attainment

Air Quality Status	Pollutant				
	SO ₂ ^a	TSP ^{a,b}	CO	O ₃	NO _x
Attainment					
No. of Counties Containing NA Areas in 1981	1/0	4/7	2	0	0
No. of Counties Containing NA Areas in 1987	0/0	2/11	1	0	0
State Implementation Plan ^c	N/N	A/A	A	N	N
Improvement (1981 to 1987)					
No. of Counties that Changed from Primary NA to Secondary NA	0	2	d	d	d
No. of Counties that Changed from Secondary NA to Full Attainment	0	1	d	d	d
No. of Counties that Changed from Primary NA to Full Attainment	1	0	1	0	0
Total No. of Counties that Improved	1	3	1	0	0
Deterioration (1981 to 1987)					
No. of Counties that Changed from Secondary NA to Primary NA	0	0	d	d	d
No. of Counties that Changed from Full Attainment to Secondary NA	0	4	d	d	d
No. of Counties that Changed from Full Attainment to Primary NA	0	0	0	0	0
Total No. of Counties that Deteriorated	0	4	0	0	0

^aWhen two values given: Primary NA/Secondary NA.

^bTSP standard replaced by fine particulate standard (PM₁₀) on July 31, 1987. See Sec. 2 of the report summary for details on PM₁₀ and a full list of Group I and II areas. Iowa: Group I counties = 0; Group II counties = 3.

^cA = Approved; C = Conditionally Approved; D = Disapproved; E = Extended Deadline; I = Incomplete; N = Not Required; R = Under Review; S = see SIP summary.

^dNo secondary standard exists for CO, O₃, or NO_x.

TABLE VII.2 Iowa: Comparison of 1981 and 1987 County Nonattainment Designations^a

County Code	County	SO ₂				TSP				CO		O ₃		NO _x	
		Prim		Sec		Prim		Sec		Prim		Prim		Prim	
		81	87	81	87	81	87	81	87	81	87	81	87	81	87
19013	BLACK HAWK								P						
19033	CERRO GORDO					P	P	P	P						
19045	CLINTON								P						
19061	DUBUQUE	P								P					
19111	LEE							P							
19113	LINN					P			P						
19127	MARSHALL								P						
19139	MUSCATINE								P						
19153	POLK					P	P	P	P	P	P				
19155	POTTAWATTAMIE							P	P						
19163	SCOTT					P		P	P						
19187	WEBSTER							P	P						
19193	WOODBURY							P	P						

^aP = part of county, W = whole county.

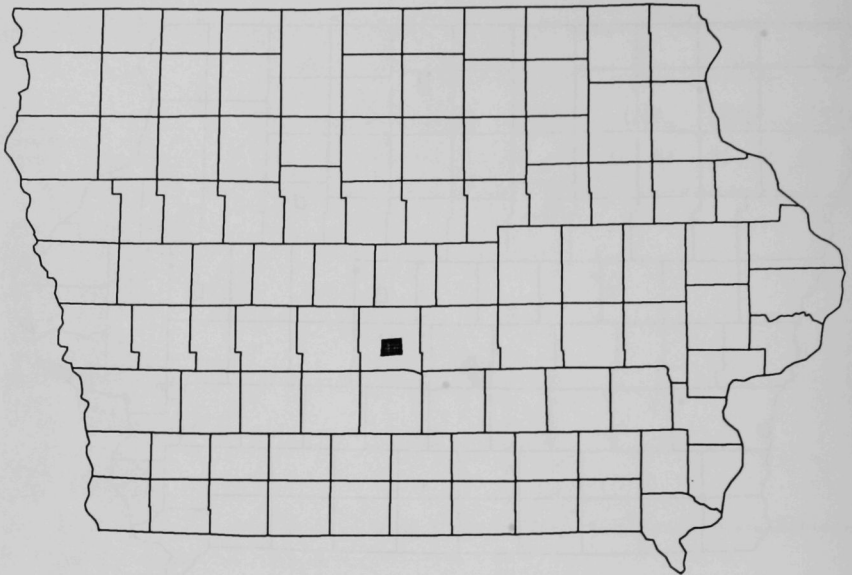


FIGURE VII.2 Iowa: CO Nonattainment Areas as Designated in 1987

TABLE VII.3 Iowa: Synopsis of SIP Attainment Strategies for Areas Currently in Violation of NAAQS

Area ^a	NA ^b	Plan Date	EPA Action ^c	Source(s)	Strategy ^d
<u>TSP:</u>					
Waterloo	S	7/81	A	Rural fugitive dust in all areas	Redesignate to unclassified
Mason City	P	5/84			Smaller primary nonattainment area
Clinton, Cedar Rapids, Muscatine, and Marshalltown	S	7/81	A		Smaller nonattainment area. Request for redesignation to unclassified denied.
Des Moines and Davenport	P S	5/84	A	Mobile; urban non-traditional	Paving, cleaning streets
<u>CO:</u>					
Des Moines ^e	P	6/79	A	Mobile	FMVECP; TCM; attainment by 1982

^aCities unless otherwise noted.

^bNonattainment violation indicated by pollutant and as P = primary and S = secondary.

^cA = Approved; C = Conditionally Approved; D = Disapproved; I = Incomplete; R = Under Review.

^dSee p. vii for a listing of the abbreviations.

^eEPA has received a request from the state of Iowa to reduce the size of the CO nonattainment area in Des Moines.

**TABLE VII.4 Iowa: PSD
Class I Areas**

Location	Area Name	Acreage
None		

**TABLE VII.5 Iowa: Recommended
Class I Areas**

Area Name	Total Acreage	Acreage Already Class I
None		

**TABLE VII.6 Iowa: Areas That Cannot Be Reclassified
as Class III**

Area Name	Total Acreage	Acreage Already Class I
National Wildlife Refuges:		
Mark Twain	10,472	-
Mississippi River	30,315	-
Upper Mississippi	20,324	-

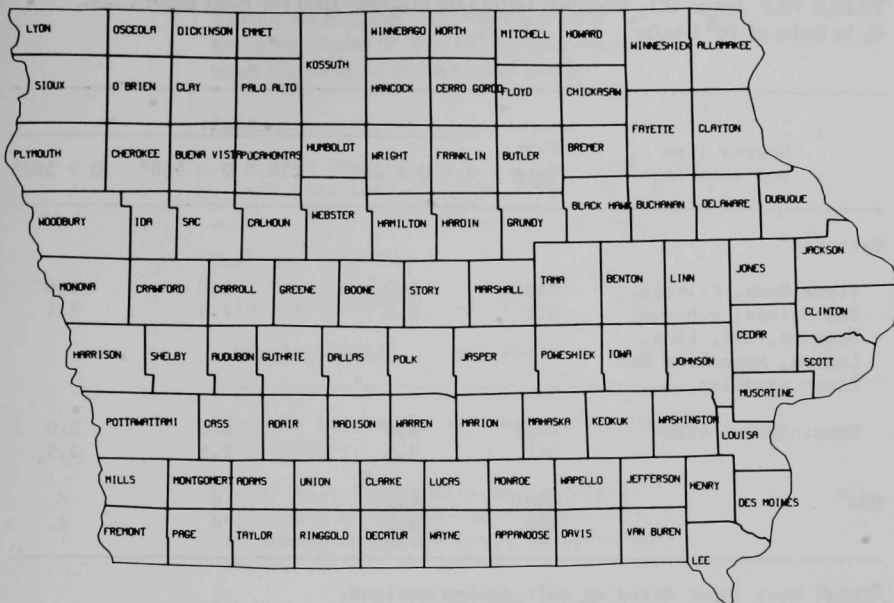


FIGURE VII.3 Iowa: Key to Counties

TABLE VII.7 Iowa: SO₂ Emission Limits (lb SO₂/10⁶ Btu) for Heat Input Class, Q, in Units of 10⁶ Btu/hr

Source Type and Location	Fuel Type	Limit		
		0 < Q ≤ 250 ^a	250 < Q ≤ 500 ^a	Q > 500 ^a
Existing ^b				
Black Hawk, Clinton, Des Moines, Dubuque, Jackson, Lee, Linn, Louisa, Muscatine and Scott counties	Coal	6.0	6.0	6.0
	Oil	2.5	2.5	2.5
Remainder of state	Coal	5.0	5.0	5.0
	Oil	2.5	2.5	2.5
New ^c	Coal	6.0	d	d
	Oil	2.5	d	d

^aTotal heat input based on unit design maximum.

^bSources constructed on or before 9/23/70.

^cSources constructed after 9/23/70.

^dNew sources constructed after 8/17/71 must comply with at least NSPS, or with more stringent permit conditions.

**TABLE VII.8 Iowa: Particulate Matter
Emission Limits (lb PM/10⁶ Btu) for Heat
Input Class, Q, in Units of 10⁶ Btu/hr^a**

Source Type and Location	Fuel Type	Limit for Q > 0 ^b
New ^c and Existing		
Inside SMSAs ^d	All Fuels	0.6 ^e
Outside SMSAs ^d	All Fuels	0.8 ^e

^aSoon to be revised to remove stack height provisions.

^bTotal heat input based on aggregate of all fuels burned by individual stack; allowable emissions based on individual stack.

^cSources with Q > 250 x 10⁶ Btu/hr must comply with at least NSPS, or with more stringent state standards.

^dSMSA = Standard Metropolitan Statistical Area.

^eMaximum allowable emission rate: source-specific emission limits determined by reference to ASME Standard, APS-1. Sources are also limited by a maximum ground level concentration of PM.

TABLE VII.9 Iowa: SO₂ Emission Limits for Electrical Utility Generating Plants

Plant Name	Unit ID	Year on Line	Capacity (MW)	Emission Limits (lb/10 ⁶ Btu)		Oil/ Gas	Averaging Period (hr)
				Stated Coal ^a	Equiv. Annual Avg. ^b		
ALLIED ^d	1 ^c	1989	380	1.20			
AMES	5	1950	7	5.00	3.92		2
AMES	6	1958	12	5.00	3.92		2
AMES	7	1968	37	5.00	3.92		2
AMES ^d	8	1982	60	1.20			
ATLANTIC	1	1949	4				
ATLANTIC	2	1958	5			2.50	2
ATLANTIC	3						
BOONE	1HP	1946	16	5.00	3.92		2
BOONE	2HP	1953	36	5.00	3.92		2
BOONE	2LP	1947	4	5.00	3.92		2
BOONE	4LP	1923	4	5.00	3.92		2
BRIDGEPORT	1 ^c	1953	20	5.00	3.92	2.50	2
BRIDGEPORT	2	1953	0	5.00	3.92	2.50	2
BRIDGEPORT	3	1957	21	5.00	3.92	2.50	2
BURLINGTON	1	1968	207	6.00	4.70	2.50	2
CENTRAL HEATING	1	1949	3	5.00	3.92	2.50	2
CENTRAL HEATING	2	1949	3	5.00	3.92	2.50	2
CENTRAL HEATING	4	1961	7	5.00	3.92	2.50	2
CENTRAL HEATING	5	1970	11	5.00	3.92	2.50	2
COUNCIL BLUFFS	1	1954	48	5.00	3.92	2.50	2
COUNCIL BLUFFS	2	1958	91	5.00	3.92	2.50	2
COUNCIL BLUFFS ^d	3	1978	650	1.20	0.94	0.80	2
DES MOINES	4 ^c	1938	40			2.50	2
DES MOINES	5 ^c	1950	50	5.00	3.92	2.50	2
DES MOINES	6	1954	71	5.00	3.92	2.50	2
DES MOINES	7	1964	116	5.00	3.92	2.50	2
DUBUQUE	2	1929	15	6.00	4.70	2.50	2
DUBUQUE	3	1952	30	6.00	4.70	2.50	2
DUBUQUE	4	1959	35	6.00	4.70	2.50	2
FAIR STATION	1	1960	24	6.00	4.70	2.50	2
FAIR STATION	2	1967	39	6.00	4.70	2.50	2
FAIRMONT	1	1935	1	6.00			
FAIRMONT	3	1945	4	6.00			
FAIRMONT	4	1949	4	6.00			

TABLE VII.9 Iowa (Cont'd)

Plant Name	Unit ID	Year on Line	Capacity (MW)	Emission Limits (lb/10 ⁶ Btu)			Averaging Period (hr)
				Stated Coal ^a	Equiv. Annual Avg. ^b	Oil/Gas	
FAIRMONT	5	1959	15	6.00			
GUTHRIE ^d	1		650	1.20	1.13		720
HAWKEYE	1 ^c	1949	8	5.00	3.92	2.50	2
HAWKEYE	2 ^c	1954	12	5.00	3.92	2.50	2
HUMBOLDT	1	1950	8	5.00	3.92	2.50	2
HUMBOLDT	2	1950	8	5.00	3.92	2.50	2
HUMBOLDT	3	1951	12	5.00	3.92	2.50	2
HUMBOLDT	4	1953	17	5.00	3.92	2.50	2
KAPP, M L	1	1947	19	6.00	4.70	2.50	2
KAPP, M L	2	1967	220	6.00	4.70	2.50	2
KIRK	1 ^c	1980	8				
KIRK	3 ^c	1969	1				
KIRK	4 ^c	1969	1				
KIRK	5 ^c	1979	8				
LANSING	1	1948	18	5.00	3.92	2.50	2
LANSING	2	1949	11	5.00	3.92	2.50	2
LANSING	3	1957	34	5.00	3.92	2.50	2
LANSING ^d	4	1977	260	1.20	0.94	0.80	2
LOUISA ^d	1	1983	650	0.96	0.90		720
MAYNARD	1 ^c	1951	77	6.00	4.70	2.50	2
MAYNARD	2	1958	39	6.00	4.70	2.50	2
MUSCATINE	5	1944	8	6.00	4.70		2
MUSCATINE	6	1949	13	6.00	4.70		2
MUSCATINE	7	1959	24	6.00	4.70		2
MUSCATINE	8	1969	80	6.00	4.70		2
MUSCATINE ^d	9	1983	150	0.44			
NEAL, GEORGE	1	1964	147	5.00	3.92		2
NEAL, GEORGE	2	1972	320	5.00	3.92		2
NEAL, GEORGE	3	1975	520	5.00	3.92	2.50	2
NEAL, GEORGE ^d	4	1979	576	1.20	0.94	1.20	2
NEAL, GEORGE ^d	5 ^c	1990	600	1.20	1.13		720
OTTUMWA ^d	1	1981	675	1.20			
PELLA	6	1972	26	5.00	3.92	2.50	2
PRAIRIE CREEK	1	1950	24	6.00	4.70	2.50	2
PRAIRIE CREEK	2	1950	24	6.00	4.70	2.50	2

TABLE VII.9 Iowa (Cont'd)

Plant Name	Unit ID	Year on Line	Capacity (MW)	Emission Limits (lb/10 ⁶ Btu)			Averaging Period (hr)
				Stated Coal ^a	Equiv. Annual Avg. ^b	Oil/Gas	
PRAIRIE CREEK	3	1968	139	6.00	4.70	2.50	2
PRAIRIE CREEK	4	1968	139	6.00	4.70	2.50	2
RIVERSIDE	1 ^c	1925	20				
RIVERSIDE	3 ^c	1937	23	6.00	4.70	2.50	2
RIVERSIDE	4	1949	51	6.00	4.70	2.50	2
RIVERSIDE	5	1961	142	6.00	4.70	2.50	2
RIVERSIDE	2HS	1937	3	6.00	4.70	2.50	2
RIVERSIDE	3HS	1949	5	6.00	4.70	2.50	2
STREETER	4	1950	4	6.00	4.70		2
STREETER	5	1954	4	6.00	4.70		2
STREETER	6	1963	17	6.00	4.70		2
STREETER	7	1973	36	6.00	4.70		2
SUTHERLAND	1	1955	34	5.00	3.92		2
SUTHERLAND	2	1955	34	5.00	3.92		2
SUTHERLAND	3	1961	82	5.00	3.92		2
UNIVERSITY OF IOWA	1	1951	3	5.00	3.92	2.50	2
UNIVERSITY OF IOWA	5	1957	20	5.00	3.92	2.50	2
UNIVERSITY OF IOWA	6	1975	15	5.00	3.92	2.50	2
WISDOM, EARL F	1	1960	38	5.00	3.92		2
6TH STREET	1	1921	9				2
6TH STREET	2	1930	5				2
6TH STREET	4	1941	20	6.00	4.70	2.50	2
6TH STREET	5 ^c	1917	7	6.00	4.70	2.50	2
6TH STREET	6	1925	10	6.00	4.70	2.50	2
6TH STREET	7	1944	20	6.00	4.70	2.50	2
6TH STREET	8	1950	31	6.00	4.70	2.50	2

^aLimit as stated in regulations.^bEquivalent coal limit to account for variability of sulfur content.^cUnit not on line in 1984.^dNSPS unit.

TABLE VII.10 Kansas: Summary of Air-Quality Attainment

Air Quality Status	Pollutant				
	SO ₂ ^a	TSP ^{a,b}	CO	O ₃	NO _x
Attainment					
No. of Counties Containing NA Areas in 1981	0/0	1/2	1	3	0
No. of Counties Containing NA Areas in 1987	0/0	1/1	1	2	0
State Implementation Plan ^c	N	A	R	I	N
Improvement (1981 to 1987)					
No. of Counties that Changed from Primary NA to Secondary NA	0	1	d	d	d
No. of Counties that Changed from Secondary NA to Full Attainment	0	1	d	d	d
No. of Counties that Changed from Primary NA to Full Attainment	0	0	0	1	0
Total No. of Counties that Improved	0	2	0	1	0
Deterioration (1981 to 1987)					
No. of Counties that Changed from Secondary NA to Primary NA	0	0	d	d	d
No. of Counties that Changed from Full Attainment to Secondary NA	0	0	d	d	d
No. of Counties that Changed from Full Attainment to Primary NA	0	0	0	0	0
Total No. of Counties that Deteriorated	0	0	0	0	0

^aWhen two values given: Primary NA/Secondary NA.

^bTSP standard replaced by fine particulate standard (PM₁₀) on July 31, 1987. See Sec. 2 of the report summary for details on PM₁₀ and a full list of Group I and II areas. Kansas: Group I counties = 0; Group II counties = 1.

^cA = Approved; C = Conditionally Approved; D = Disapproved; E = Extended Deadline; I = Incomplete; N = Not Required; R = Under Review; S = see SIP summary.

^dNo secondary standard exists for CO, O₃, or NO_x.

TABLE VII.11 Kansas: Comparison of 1981 and 1987 County Nonattainment Designations^a

County Code	County	SO ₂				TSP				CO		O ₃		NO _x	
		Prim		Sec		Prim		Sec		Prim		Prim		Prim	
		81	87	81	87	81	87	81	87	81	87	81	87	81	87
20045	DOUGLAS													W	
20091	JOHNSON													W	W
20173	SEDGWICK									P	P				
20177	SHAWNEE							P							
20209	WYANDOTTE					P		P	P					W	W

^ap = part of county, W = whole county.

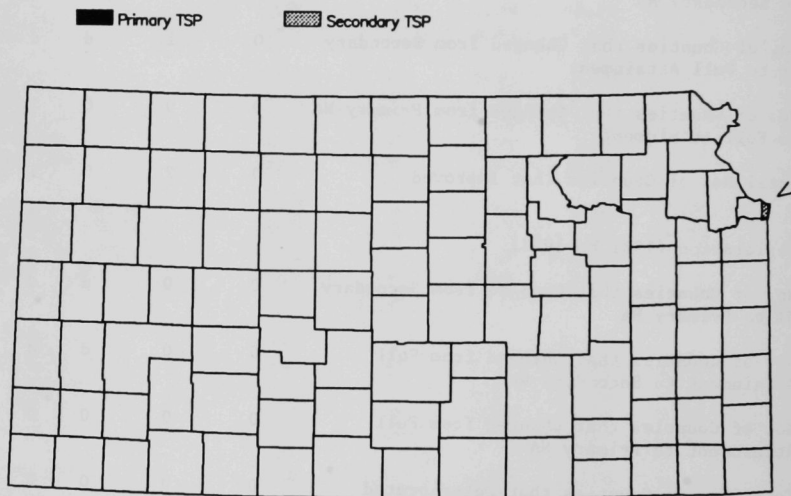


FIGURE VII.4 Kansas: TSP Nonattainment Areas as Designated in 1987

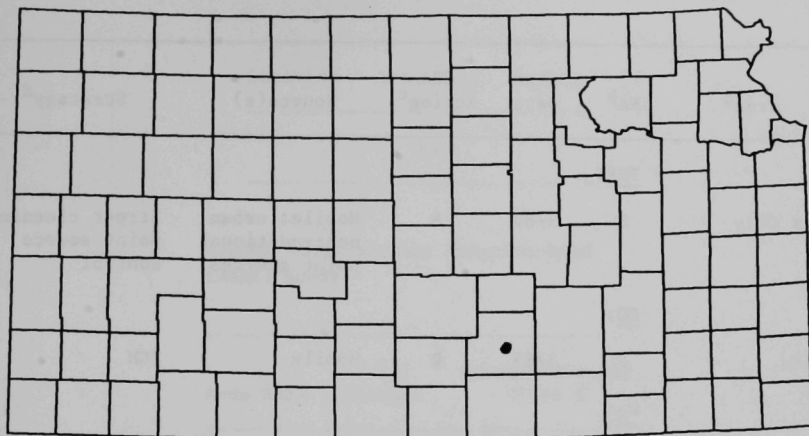


FIGURE VII.5 Kansas: CO Nonattainment Areas as Designated in 1987

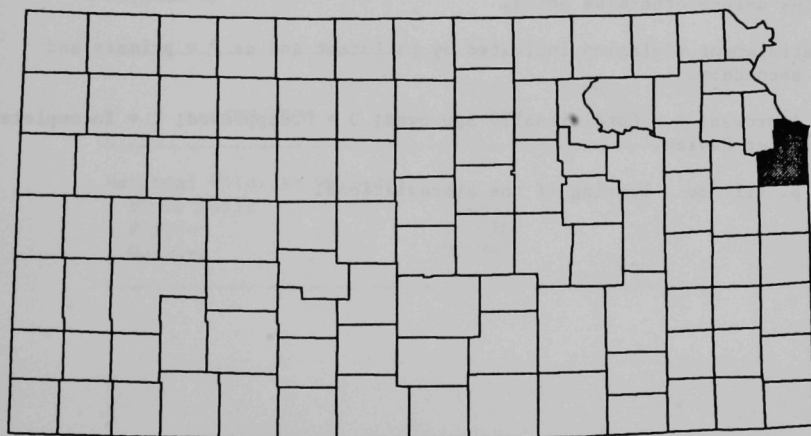


FIGURE VII.6 Kansas: O₃ Nonattainment Areas as Designated in 1987

TABLE VII.12 Kansas: Synopsis of SIP Attainment Strategies for Areas Currently in Violation of NAAQS

Area ^a	NA ^b	Plan Date	EPA Action ^c	Source(s)	Strategy ^d
<u>TSP:</u>					
Kansas City	S	9/80	A	Mobile; urban nontraditional point sources	Street cleaning; point source control
<u>CO:</u>					
Wichita	P	3/85	R	Mobile	TCM
<u>O₃:</u>					
Wyandotte and Johnson counties	P	6/86	I	Mobile	RACT on VOC sources; FMVECP; Stage 1 controls; attainment by 1987

^aCities unless otherwise noted.

^bNonattainment violation indicated by pollutant and as P = primary and S = secondary.

^cA = Approved; C = Conditionally Approved; D = Disapproved; I = Incomplete; R = Under Review.

^dSee p. vii for a listing of the abbreviations.

**TABLE VII.13 Kansas: PSD
Class I Areas**

Location	Area Name	Acreage
	None	

**TABLE VII.14 Kansas: Recommended
Class I Areas**

Area Name	Total Acreage	Acreage Already Class I
		None

**TABLE VII.15 Kansas: Areas That Cannot Be Reclassified
as Class III**

Area Name	Total Acreage	Acreage Already Class I
National Wildlife Refuges:		
Flint Hills	18,463	-
Kirwin	10,778	-
Quivira	21,820	-

TABLE VII.16 Kansas: SO₂ Emission Limits (lb S/10⁶ Btu) by Heat Input Class, Q, in Units of 10⁶ Btu/hr

Source Type	Fuel Type	Limit for Q > 0 ^a
Existing ^b (constructed on or before 1/1/71)	All Fossil Fuels ^c	1.5 ^d
New ^e (constructed after 1/1/71)	All Fossil Fuels	1.5

^aTotal heat input based on total plant design rating or manufacturer's rating.

^bFor equipment that operates 2000 hours or more per year.

^cExcept natural gas.

^dEmission limitation applicable only if annual emissions increased by a factor of 2 or more above baseline annual emissions, where baseline annual emissions refer to either 1971 emissions or emissions from the first 12 months of the plant's operation.

^eSources with Q > 250 x 10⁶ Btu/hr must comply with at least NSPS, or with more stringent state standards.

TABLE VII.17 Kansas: Particulate Matter Emission Limits (lb PM/10⁶ Btu) by Heat Input Class, Q, in Units of 10⁶ Btu/hr

Source Type	Fuel Type	Limit		
		Q < 10 ^a	10 ≤ Q ≤ 10,000 ^a	Q > 10,000 ^a
New ^b and Existing	All Fuels	0.6	1.026Q ^{-0.233}	0.12

^aTotal heat input based on design or actual input for all units; allowable emissions based on entire plant.

^bNew sources with Q > 250 x 10⁶ Btu/hr must comply with at least NSPS, or with more stringent state standards.

TABLE VII.18 Kansas: SO₂ Emission Limits for Electrical Utility Generating Plants

Plant Name	Unit ID	Year on Line	Capacity (MW)	Emission Limits (lb/10 ⁶ Btu)		Oil/ Gas	Averaging Period (hr)
				Stated Coal ^a	Equiv. Annual Avg. ^b		
ABILENE	1	1940	21			3.00	
ABILENE	2	1947	21			3.00	
ANTHONY	1	1961	3				
ANTHONY	2	1948	2				
ANTHONY	3	1939	1				
CHANUTE	6	1957	10				
CIMARRON RIVER	1	1963	59			3.00	1
CLAY CENTER	1	1942	2				
CLAY CENTER	3	1961	5				
COFFEYVILLE	1	1926	3			3.00	1
COFFEYVILLE	2	1925	2			3.00	1
COFFEYVILLE	3	1921	2			3.00	1
COFFEYVILLE	4	1937	5			3.00	1
COFFEYVILLE	5	1949	10			3.00	1
COFFEYVILLE	6	1956	18			3.00	1
COFFEYVILLE	7	1973	35			3.00	1
COLBY	1	1951	6				
COLBY	2	1955	6				
CONCORDIA	1 ^c	1980	2				
CONCORDIA	2 ^c	1980	6				
EVANS, GORDON	1	1961	162			3.00	1
EVANS, GORDON	2	1967	380			3.00	1
GARDEN CITY	1	1948	4			3.00	1
GARDEN CITY	2	1953	8			3.00	1
GARDEN CITY	3	1962	13			3.00	1
GILL, MURRAY	1	1952	51			3.00	1
GILL, MURRAY	2	1954	78			3.00	1
GILL, MURRAY	3	1956	121			3.00	1
GILL, MURRAY	4	1959	122			3.00	1
HAYS	1	1948	6				
HAYS	2	1957	8				
HAYS	3	1938	4				
HOLCOMB ^d	1	1983	280	0.48	0.45		720
HOLCOMB ^d	2 ^c	1991	280	0.48	0.45		720
HUTCHINSON	1	1950	21			3.00	1

TABLE VII.18 Kansas (Cont'd)

Plant Name	Unit ID	Year on Line	Capacity (MW)	Emission Limits (lb/10 ⁶ Btu)			Averaging Period (hr)
				Stated Coal ^a	Equiv. Annual Avg. ^b	Oil/Gas	
HUTCHINSON	2	1950	21			3.00	1
HUTCHINSON	3	1951	34			3.00	1
HUTCHINSON	4	1965	201			3.00	1
IOLA	3	1941	2				
IOLA	4	1949	4				
IOLA	5	1957	5				
JEFFREY ^d	1	1978	680	1.20	0.93	0.80	1
JEFFREY ^d	2	1980	680	1.20	0.93	0.80	1
JEFFREY ^d	3	1983	680	1.20		0.80	
JUDSON LARGE	1 ^c	1980	7			3.00	
JUDSON LARGE	2 ^c	1980	7			3.00	
JUDSON LARGE	3	1957	19			3.00	
JUDSON LARGE	4	1969	148			3.00	1
KAW	1	1955	40	3.00	2.33	3.00	1
KAW	2	1957	44	3.00	2.33	3.00	1
KAW	3	1962	60	3.00	2.33	3.00	1
LACYGNE	1	1973	820	3.00	2.33	3.00	1
LACYGNE ^d	2	1977	630	1.20	0.93	1.20	1
LARNED	1	1939	3			3.00	
LARNED	2	1949	1			3.00	
LARNED	3	1966	8			3.00	
LARNED	4	1955	1			3.00	
LAWRENCE	1 ^c	1939	10			3.00	
LAWRENCE	2	1952	36	3.00	2.33	3.00	1
LAWRENCE	3	1954	62	3.00	2.33	3.00	1
LAWRENCE	4	1960	134	3.00	2.33	3.00	1
LAWRENCE	5	1971	419	3.00	2.33	3.00	1
MCPHERSON 1	1	1940	3			3.00	
MCPHERSON 1	2	1950	7			3.00	
MCPHERSON 1	3	1957	10			3.00	
MCPHERSON 1	4	1936	2			3.00	
MULLERGREN, ARTHUR	1	1953	19			3.00	1
MULLERGREN, ARTHUR	2	1955	19			3.00	1
MULLERGREN, ARTHUR	3	1963	95			3.00	1
NEARMAN CREEK ^d	1	1981	235	1.20	1.13		720

TABLE VII.18 Kansas (Cont'd)

Plant Name	Unit ID	Year on Line	Capacity (MW)	Emission Limits (lb/10 ⁶ Btu)		Oil/ Gas	Averaging Period (hr)
				Stated Coal ^a	Equiv. Annual Avg. ^b		
NEARMAN CREEK ^d	2 ^c	1990	310	1.20	1.13		720
NEOSHO	3	1954	75			3.00	1
OTTAWA	1	1928	3				
OTTAWA	2	1940	4				
PLANT NO. 2	1	1963	28			0.80	1
PRATT	1	1938	2				
PRATT	2	1946	3				
PRATT	3	1952	5				
PRATT	4	1965	14				
QUINDARO	1	1966	83	3.00	2.33	3.00	1
QUINDARO	2	1971	135	3.00	2.33	3.00	1
QUINDARO	7	1938	32	3.00	2.33	3.00	1
QUINDARO	8	1947	32	3.00	2.33	3.00	1
QUINDARO	9	1952	32	3.00	2.33	3.00	1
RIPLEY	1	1938	26			3.00	1
RIPLEY	2	1948	29			3.00	1
RIPLEY	3	1949	34			3.00	1
RIVERTON	3	1923	11			3.00	1
RIVERTON	4	1941	9			3.00	1
RIVERTON	6	1939	25			3.00	1
RIVERTON	7	1950	40	3.00	2.33	3.00	1
RIVERTON	8	1954	51	3.00	2.33	3.00	1
ROSS BEACH	1	1947	12			3.00	
ROSS BEACH	2	1949	24			3.00	
SUNFLOWER	1	1973	94			3.00	1
TECUMSEH	3 ^c	1927	15			3.00	
TECUMSEH	4 ^c	1930	25			3.00	1
TECUMSEH	5 ^c	1948	32	3.00	2.33	3.00	1
TECUMSEH	6 ^c	1955	32	3.00	2.33	3.00	1
TECUMSEH	7	1957	86	3.00	2.33	3.00	1
TECUMSEH	8	1962	143	3.00	2.33	3.00	1
UNNAMED ^d	1 ^c	1993	700	1.20	1.13		720
UNNAMED ^d	2 ^c	1995	700	1.20	1.13		720
WELLINGTON	1	1937	2			3.00	1
WELLINGTON	2	1947	4			3.00	1

TABLE VII.18 Kansas (Cont'd)

Plant Name	Unit ID	Year on Line	Capacity (MW)	Emission Limits (lb/10 ⁶ Btu)			Averaging Period (hr)
				Stated Coal ^a	Equiv. Annual Avg. ^b	Oil/Gas	
WELLINGTON	3	1956	8			3.00	1
WELLINGTON	4	1972	20			3.00	
WICHITA	1	1918	10				
WICHITA	2	1920	10				
WINFIELD	1	1957	10			3.00	
WINFIELD	2	1952	5			3.00	
WINFIELD	3	1939	3			3.00	
WINFIELD	4	1970	27			3.00	

^aLimit as stated in regulations.

^bEquivalent coal limit to account for variability of sulfur content.

^cUnit not on line in 1984.

^dNSPS unit.

TABLE VII.19 Missouri: Summary of Air-Quality Attainment

Air Quality Status	Pollutant				
	SO ₂ ^a	TSP ^{a,b}	CO	O ₃	NO _x
Attainment					
No. of Counties Containing NA Areas in 1981	0/0	4/11	1	7	0
No. of Counties Containing NA Areas in 1987	0/0	2/3	1	7	0
State Implementation Plan ^c	N/N	S/S	A	S	N
Improvement (1981 to 1987)					
No. of Counties that Changed from Primary NA to Secondary NA	0	1	d	d	d
No. of Counties that Changed from Secondary NA to Full Attainment	0	7	d	d	d
No. of Counties that Changed from Primary NA to Full Attainment	0	1	0	0	0
Total No. of Counties that Improved	0	9	0	0	0
Deterioration (1981 to 1987)					
No. of Counties that Changed from Secondary NA to Primary NA	0	0	d	d	d
No. of Counties that Changed from Full Attainment to Secondary NA	0	0	d	d	d
No. of Counties that Changed from Full Attainment to Primary NA	0	0	0	0	0
Total No. of Counties that Deteriorated	0	0	0	0	0

^aWhen two values given: Primary NA/Secondary NA.

^bTSP standard replaced by fine particulate standard (PM₁₀) on July 31, 1987. See Sec. 2 of the report summary for details on PM₁₀ and a full list of Group I and II areas. Missouri: Group I counties = 0; Group II counties = 0.

^cA = Approved; C = Conditionally Approved; D = Disapproved; E = Extended Deadline; I = Incomplete; N = Not Required; R = Under Review; S = see SIP summary.

^dNo secondary standard exists for CO, O₃, or NO_x.

TABLE VII.20 Missouri: Comparison of 1981 and 1987 County Nonattainment Designations^a

County Code	County	SO ₂				TSP				CO		O ₃		NO _x	
		Prim		Sec		Prim		Sec		Prim		Prim		Prim	
		81	87	81	87	81	87	81	87	81	87	81	87	81	87
29001	ADAIR							P							
29019	BOONE							P							
29021	BUCHANAN					P	P	P	P						
29037	CASS							W							
29047	CLAY					P		P				W	W		
29049	CLINTON							W							
29071	FRANKLIN											W	W		
29095	JACKSON					P		P	P			W	W		
29099	JEFFERSON											W	W		
29143	NEW MADRID							P							
29165	PLATTE							W				W	W		
29177	RAY							W							
29183	ST CHARLES											W	W		
29189	ST LOUIS					P	P	P	P	P	P	W	W		

^aP = part of county, W = whole county.

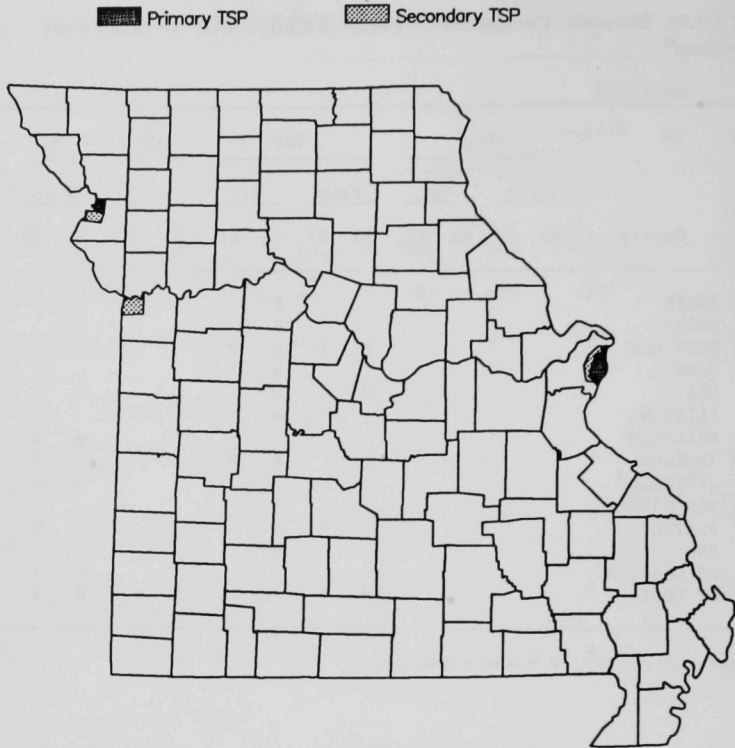


FIGURE VII.8 Missouri: TSP Nonattainment Areas as Designated in 1987

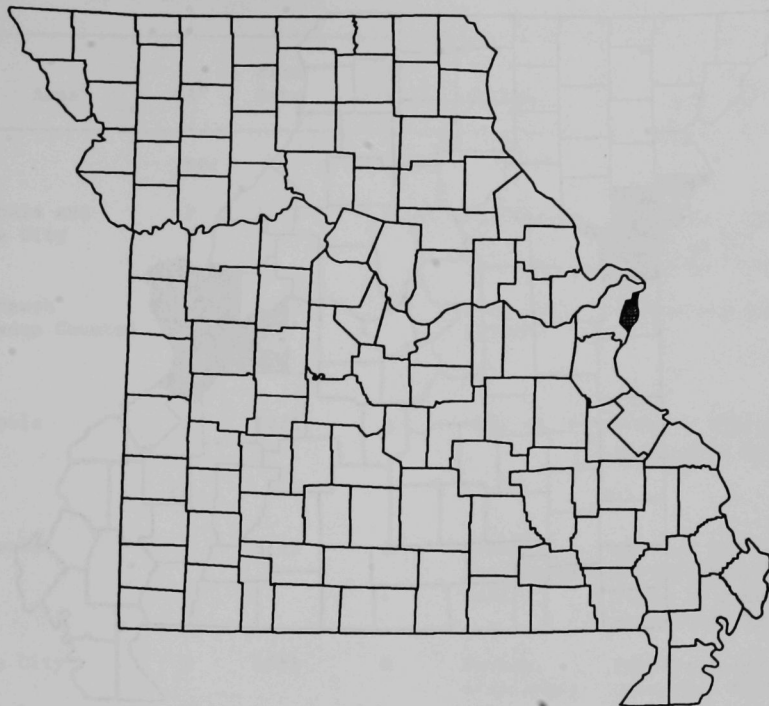


FIGURE VII.9 Missouri: CO Nonattainment Areas as Designated in 1987

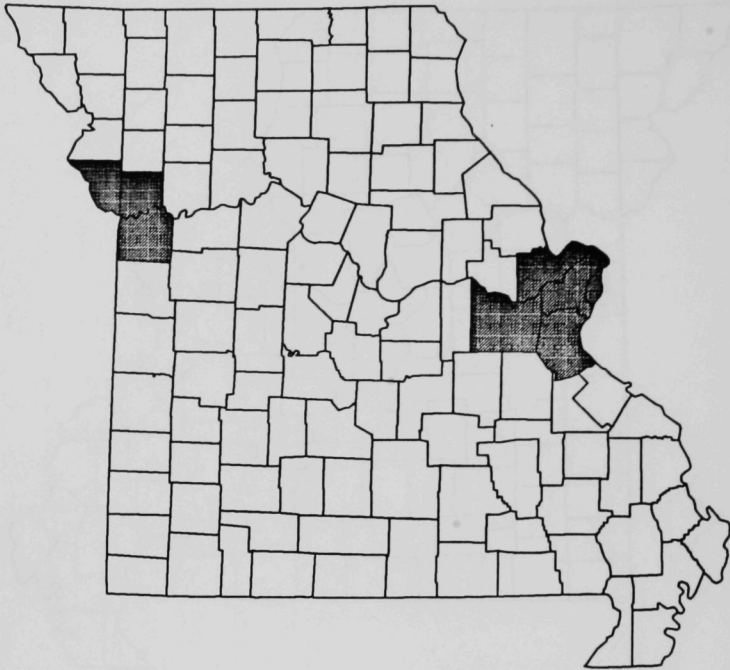


FIGURE VII.10 Missouri: O₃ Nonattainment Areas as Designated in 1987

TABLE VII.21 Missouri: Synopsis of SIP Attainment Strategies for Areas Currently in Violation of NAAQS

Area ^a	NA ^b	Plan Date	EPA Action ^c	Source(s)	Strategy ^d
<u>TSP:</u>					
St. Louis and Kansas City	P S	6/79	A	Utilities; industrial combustion	Compliance with existing SIP emission limits
St. Joseph (Buchanan County)	P	6/79	I	Area and mobile	Incomplete plan
<u>CO:</u>					
St. Louis	P	12/82	A	Mobile	FMVECP; TCM; I&M; attainment by 1987
<u>O₃:</u>					
St. Louis	P	8/85	A	Mobile, stationary area	RACT on VOC sources; FMVECP; TCM; I&M; Stage II controls; attainment by 1987
Kansas City	P	6/85	R	Mobile, stationary area	FMVECP; Stage I controls; RACT on VOC sources; attainment by 1987

^aCities unless otherwise noted.

^bNonattainment violation indicated by pollutant and as P = primary and S = secondary.

^cA = Approved; C = Conditionally Approved; D = Disapproved; I = Incomplete; R = Under Review.

^dSee p. vii for a listing of the abbreviations.

TABLE VII.22 Missouri: PSD Class I Areas

Location ^a	Area Name	Acreage
1	Mingo Wilderness	8,000
2	Hercules-Glade Wilderness	12,315

^aSee Fig. VII.11.**TABLE VII.23 Missouri: Recommended Class I Areas**

Area Name	Total Acreage	Acreage Already Class I
None		

TABLE VII.24 Missouri: Areas That Cannot Be Reclassified as Class III

Area Name	Total Acreage	Acreage Already Class I
National Wild and Scenic Rivers:		
Eleven Point River	14,195	-
Ozark	80,788	
National Wildlife Refuges:		
Mingo	21,676	8,000
Swan Lake	10,669	-
National Wilderness Areas:		
Irish	16,500	-

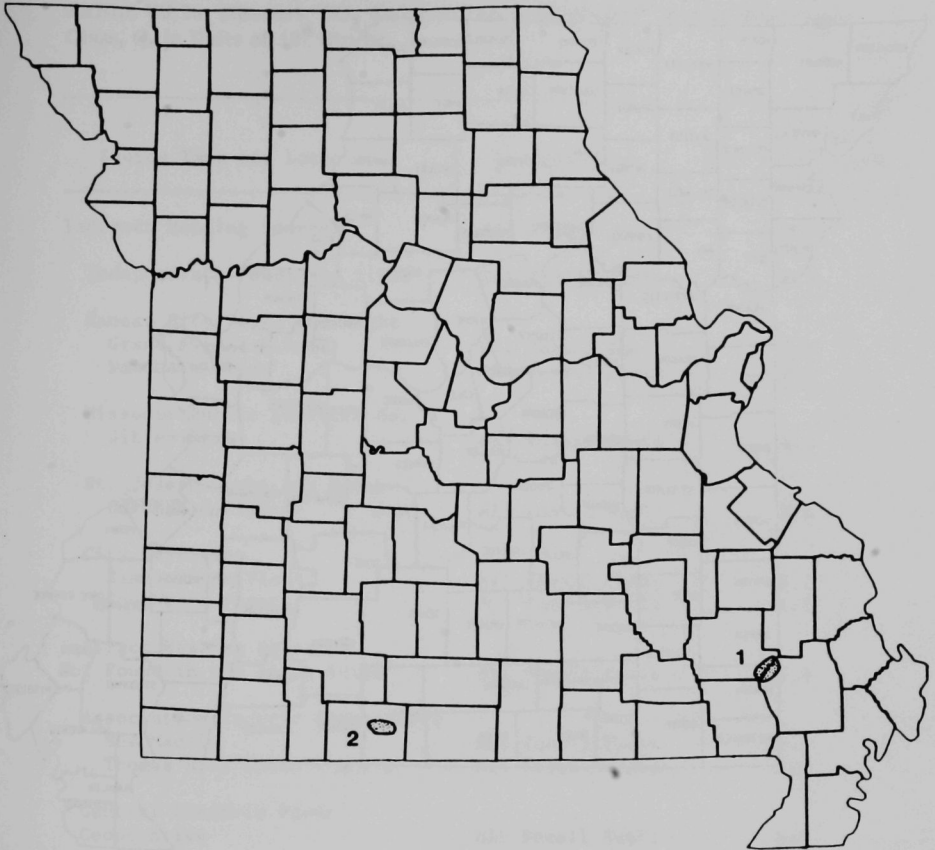


FIGURE VII.11 Missouri: PSD Class I Areas



FIGURE VII.12 Missouri: Key to Counties

TABLE VII.25 Missouri: SO₂ Emission Limits (lb SO₂/10⁶ Btu) by Heat Input Class, Q, in Units of 10⁶ Btu/hr

Source Type and Location	Fuel Type	Limit for 0.35 < Q < 2,000
Indirect Heating Sources ^a	All Fossil Fuels	8.0
Independence Power and Light	All Fossil Fuels	6.3
Kansas City Power and Light	All Fossil Fuels	9.0
Grand Avenue Plant	All Fossil Fuels	9.0
Hawthorn Plant	All Fossil Fuels	6.1
Missouri Public Services Co.	All Fossil Fuels	9.0
Sibley Plant	All Fossil Fuels	9.0
St. Joseph Light and Power	All Fossil Fuels	8.6
Lake Road Plant	All Fossil Fuels	8.6
City Utilities	All Fossil Fuels	9.2
James River Plant	All Fossil Fuels	9.2
Southwest Plant	All Fossil Fuels	1.2
Indirect Heating Sources ^a	All Fossil Fuels	8.0
Not Found in the Areas Noted ^b	All Fossil Fuels	8.0
Associated Electric Cooperative	All Fossil Fuels	10.0
New Madrid	All Fossil Fuels	10.0
Thomas Hill Units 1 and 2	All Fossil Fuels	8.0
Central Electric Power	All Fossil Fuels	6.7
Cooperative	All Fossil Fuels	6.7
Empire District Electric Co.	All Fossil Fuels	12.0
Asbury Station	All Fossil Fuels	12.0
Kansas City Power and Light	All Fossil Fuels	12.9
Montrose Station	All Fossil Fuels	12.9
Univ. of Missouri-Columbia	All Fossil Fuels	8.0

TABLE VII.25 Missouri (Cont'd)

Source Type and Location	Fuel Type	Limit for Q \geq 2,000
Indirect Heating Sources	All Fossil Fuels	2.3
Union Electric		
Labadie Plant	All Fossil Fuels	4.8
Portage des Sioux	All Fossil Fuels	4.8

^aInstallations in which fuel is burned for the primary purpose of producing steam, hot water, or hot air or other indirect heating of liquids, gases or solids and, in the course of doing so, the products of combustion do not come into direct contact with process materials. Limit of average sulfur dioxide emissions per million Btu of actual heat input based on three hour time period. Compliance with these limits shall be determined by source testing, and the heating value of the fuel shall be determined as specified in 10 CSR 10-6.040(2).

^bCity of St. Louis and St. Charles. Following counties: St. Louis, Jefferson, Franklin, Clay, Cass, Buchanan, Ray, Jackson, Platte, and Greene.

TABLE VII.26 Missouri: Particulate Matter Emission Limits (lb PM/10⁶ Btu) by Heat Input Class, Q, in Units of 10⁶ Btu/hr

Source Type and Location	Fuel Type	Limit		
		Q < Q < 10 ^a	10 ≤ Q < 5,000 ^a	Q ≥ 5,000 ^a
Independence, Kansas City, and St. Louis City ^b				
Existing sources	All Fuels	0.6	1.09Q ^{-0.259}	0.12
New sources ^{e,d}	All Fuels	0 < Q < 10 ^a	10 ≤ Q < 1,000 ^a	Q ≥ 1,000 ^a
		0.4	0.8Q ^{-0.301}	0.1
		0 < Q < 10 ^a	10 ≤ Q < 10,000 ^a	Q ≥ 10,000 ^a
Springfield and Green counties				
New ^d and existing sources	All Fuels	0.6	1.026Q ^{-0.233}	0.12
Remainder of State				
Existing sources	All Fuels	0.6	0.90Q ^{-0.174}	0.18
New sources ^{c,d}	All Fuels	0 < Q ≤ 10 ^a	10 < Q < 2,000 ^a	Q ≥ 2,000 ^a
		0.6	1.31Q ^{-0.338}	0.1

^aTotal heat input based on design maximum or actual firing rate for all units; allowable emissions based on individual stack.

^bConstructed after 4/3/71.

^cSources with Q > 250 × 10⁶ Btu/hr must comply at least with NSPS, or with more stringent state standards.

^dConstructed after 2/15/79.

TABLE VII.27 Missouri: SO₂ Emission Limits for Electrical Utility Generating Plants

Plant Name	Unit ID	Year on Line	Capacity (MW)	Emission Limits (lb/10 ⁶ Btu)			Averaging Period (hr)
				Stated Coal ^a	Equiv. Annual Avg. ^b	Oil/Gas	
ASBURY	1	1970	200	12.00	9.44		3
ASHLEY	1	1921	10			2.20	
ASHLEY	7	1917	20			2.20	
ASHLEY	8	1920	20			2.20	
ASHLEY	9	1920	20			2.20	
BLUE VALLEY	1	1958	24	6.30	4.96		3
BLUE VALLEY	2	1958	24	6.30	4.96		3
BLUE VALLEY	3	1965	60	6.30	4.96		3
CHAMOIS	1	1953	17	6.70	5.27	6.70	3
CHAMOIS	2	1960	49	6.70	5.27		3
CHILLICOTHE	3	1929	2				
CHILLICOTHE	4	1939	3				
CHILLICOTHE	5	1949	5				
CHILLICOTHE	6	1958	6				
CLINTON	4 ^c	1948	9				
COLEMAN	1	1959	6				
COLUMBIA	2	1947	8	8.00	6.29	8.00	3
COLUMBIA	4	1957	4	8.00	6.29	8.00	3
COLUMBIA	5	1963	16	8.00	6.29	8.00	3
COLUMBIA	7	1965	22	8.00	6.29		3
COLUMBIA	8	1970	36			8.00	3
EDMOND ST.	4	1965	20			8.00	3
EDMOND ST.	5	1963	12			8.00	3
EDMOND ST.	7	1950	14			8.00	3
GRAND AVENUE	1	1949	5			9.00	
GRAND AVENUE	5	1929	5	9.00	7.08		3
GRAND AVENUE	7	1930	35	9.00	7.08		3
GRAND AVENUE	8 ^c	1936	14	9.00	7.08		3
GRAND AVENUE	9	1948	40	9.00	7.08		3
GREEN, RALPH	1 ^c	1954	20			8.00	3
GREEN, RALPH	2 ^c	1958	21			8.00	3
GREEN, RALPH ^d	3	1981	61			0.22	
GREENWOOD	1	1975	49			8.00	3
GREENWOOD	2	1975	49			8.00	3
GREENWOOD	3	1977	49			8.00	3

TABLE VII.27 Missouri (Cont'd)

Plant Name	Unit ID	Year on Line	Capacity (MW)	Emission Limits (lb/10 ⁶ Btu)			Averaging Period (hr)
				Stated Coal ^a	Equiv. Annual Avg. ^b	Oil/Gas	
GREENWOOD	4	1979	49			8.00	3
HAWTHORN	1 ^c	1951	70	6.10	4.80		3
HAWTHORN	2 ^c	1951	70	6.10	4.80		3
HAWTHORN	3 ^c	1953	125	6.10	4.80		3
HAWTHORN	4 ^c	1955	140	6.10	4.80		3
HAWTHORN	5	1969	520	6.10	4.80		3
HILL, JIM	1	1950	35			8.00	3
IATAN ^d	1	1980	630	1.20			
IATAN ^d	2 ^c	1994	650	1.20	1.13		720
JAMES RIVER	1	1957	24	9.20	7.24		3
JAMES RIVER	2	1957	24	9.20	7.24		3
JAMES RIVER	3	1960	48	9.20	7.24		3
JAMES RIVER	4	1964	66	9.20	7.24		3
JAMES RIVER	5	1970	112	9.20	7.24		3
KCI	1	1977	12			8.00	3
KCI	2	1977	12			8.00	3
LABADIE	1	1970	555	4.80	3.87		24
LABADIE	2	1971	555	4.80	3.87		24
LABADIE	3	1972	555	4.80	3.87		24
LABADIE	4	1973	555	4.80	3.87		24
LAKE ROAD	1	1951	22	8.60	6.77	8.60	3
LAKE ROAD	2	1957	29	8.60	6.77	8.60	3
LAKE ROAD	3	1962	15	8.60	6.77	8.60	3
LAKE ROAD	4	1967	95	8.60	6.77	8.60	3
MARSHALL	1	1936	2	8.00	6.29		3
MARSHALL	2	1941	3	8.00	6.29		3
MARSHALL	3	1948	4			8.00	3
MARSHALL	4	1954	6			8.00	3
MARSHALL	5	1967	17			8.00	3
MERAMEC	1	1953	132	2.30	1.81		3
MERAMEC	2	1954	132	2.30	1.81		3
MERAMEC	3	1959	279	2.30	1.81		3
MERAMEC	4	1961	337	2.30	1.81		3
MEXICO	1	1949	10			8.00	3
MEXICO	2	1950	12			8.00	3

TABLE VII.27 Missouri (Cont'd)

Plant Name	Unit ID	Year on Line	Capacity (MW)	Emission Limits (lb/10 ⁶ Btu)			Averaging Period (hr)
				Stated Coal ^a	Equiv. Annual Avg. ^b	Oil/Gas	
MONTROSE	1	1958	182	12.90	10.15		3
MONTROSE	2	1960	182	12.90	10.15		3
MONTROSE	3	1964	182	12.90	10.15		3
NEVADA	1	1974	19			8.00	3
NEW MADRID	1	1972	600	10.00	7.87		3
NEW MADRID	2	1977	600	10.00	7.87		3
NORTHEAST	1 ^c	1940	36			8.00	3
NORTHEAST	2 ^c	1920	23			8.00	3
NORTHEAST	4 ^c	1925	30			8.00	3
NORTHEAST	5 ^c	1925	32			8.00	3
NORTHEAST	7 ^c	1938	14			8.00	3
RUSH ISLAND	1	1976	575	2.30	1.81		3
RUSH ISLAND	2	1977	575	2.30	1.81		3
SEDALIA	3 ^c	1950	9			8.00	3
SIBLEY	1	1960	50	9.00	7.08		3
SIBLEY	2	1962	48	9.00	7.08		3
SIBLEY	3	1969	360	9.00	7.08		3
SIKESTON ^d	1	1981	235	1.20			
SIOUX	1	1967	452	4.80	3.87		24
SIOUX	2	1968	452	4.80	3.87		24
SOUTH RIVER STATION	1	1952	8				3
SOUTH RIVER STATION	2	1953	8				3
SOUTHWEST ^d	1	1976	173	1.20	0.94	0.80	3
SOUTHWEST ^d	2 ^c	1990	200	1.20	1.13		720
THOMAS HILL	1	1966	180	8.00	6.29		3
THOMAS HILL	2	1969	290	8.00	6.29		3
THOMAS HILL ^d	3	1982	670	1.20			
UNKNOWN ^d	X ^c	1988	630	1.20	1.13		20

^aLimit as stated in regulations.^bEquivalent coal limit to account for variability of sulfur content.^cUnit not on line in 1984.^dNSPS unit.

TABLE VII.28 Nebraska: Summary of Air-Quality Attainment

Air Quality Status	Pollutant				
	SO ₂ ^a	TSP ^{a,b}	CO	O ₃	NO _x
Attainment					
No. of Counties Containing NA Areas in 1981	0/0	3/0	2	0	0
No. of Counties Containing NA Areas in 1987	0/0	1/3	1	0	0
State Implementation Plan ^c	N/N	A	A	N	N
Improvement (1981 to 1987)					
No. of Counties that Changed from Primary NA to Secondary NA	0	2	d	d	d
No. of Counties that Changed from Secondary NA to Full Attainment	0	0	d	d	d
No. of Counties that Changed from Primary NA to Full Attainment	0	0	1	0	0
Total No. of Counties that Improved	0	2	1	0	0
Deterioration (1981 to 1987)					
No. of Counties that Changed from Secondary NA to Primary NA	0	0	d	d	d
No. of Counties that Changed from Full Attainment to Secondary NA	0	0	d	d	d
No. of Counties that Changed from Full Attainment to Primary NA	0	0	0	0	0
Total No. of Counties that Deteriorated	0	0	0	0	0

^aWhen two values given: Primary NA/Secondary NA.

^bTSP standard replaced by fine particulate standard (PM₁₀) on July 31, 1987. See Sec. 2 of the report summary for details on PM₁₀ and a full list of Group I and II areas. Nebraska: Group I counties = 0; Group II counties = 2.

^cA = Approved; C = Conditionally Approved; D = Disapproved; E = Extended Deadline; I = Incomplete; N = Not Required; R = Under Review; S = see SIP summary.

^dNo secondary standard exists for CO, O₃, or NO_x.

TABLE VII.29 Nebraska: Comparison of 1981 and 1987 County Nonattainment Designations^a

County Code	County	SO ₂				TSP				CO		O ₃		NO _x	
		Prim		Sec		Prim		Sec		Prim		Prim		Prim	
		81	87	81	87	81	87	81	87	81	87	81	87	81	87
31025	CASS					W	P		P						
31055	DOUGLAS					W			P	P					
31109	LANCASTER									P	P				
31153	SARPY					W			P						

^ap = part of county, W = whole county.

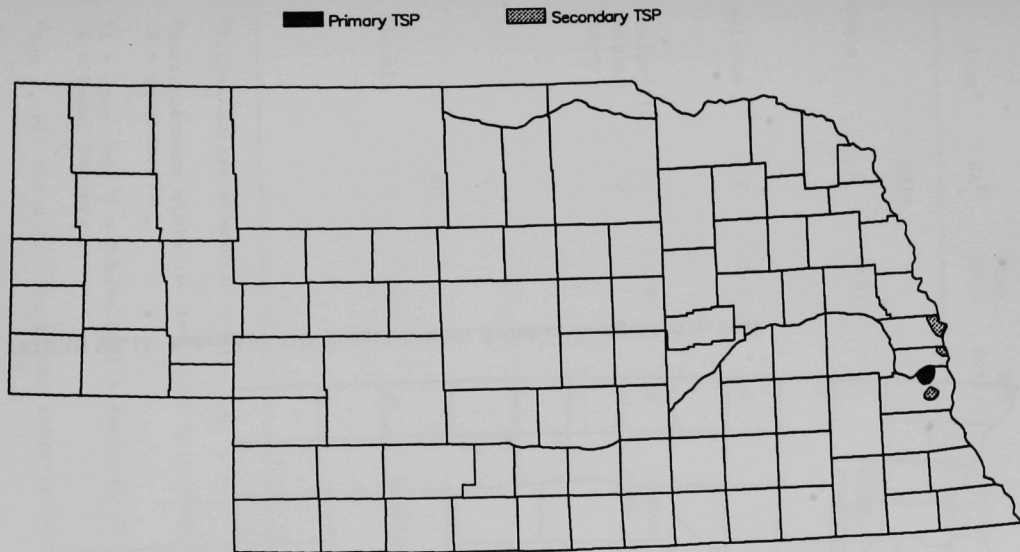


FIGURE VII.13 Nebraska: TSP Nonattainment Areas as Designated in 1987

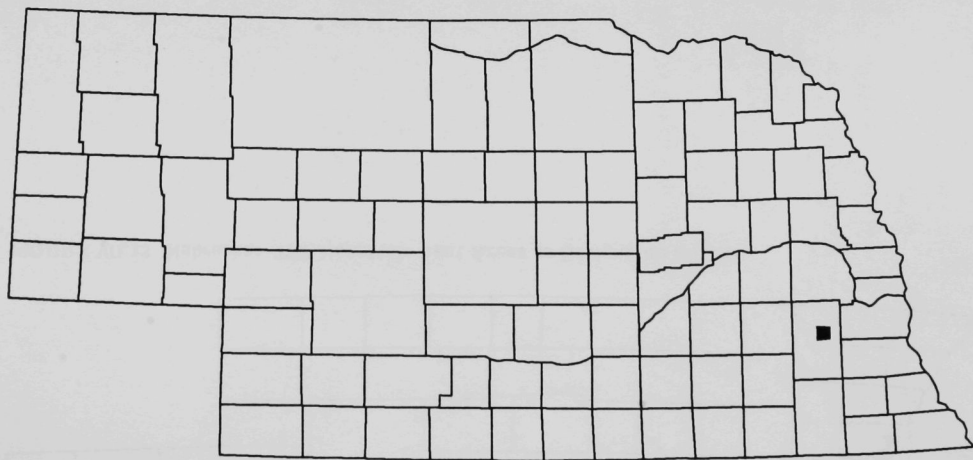


FIGURE VII.14 Nebraska: CO Nonattainment Areas as Designated in 1987

TABLE VII.30 Nebraska: Synopsis of SIP Attainment Strategies for Areas Currently in Violation of NAAQS

Area ^a	NA ^b	Plan Date	EPA Action ^c	Source(s)	Strategy ^d
<u>TSP:</u>					
Omaha	S	8/82	A	Urban non-traditional	Redesignate to smaller area; clean, pave urban streets, pave parking lots
Bellvue	S	8/82	A		RACT on major sources; redesignate Bellvue to secondary nonattainment
Louisville, Weeping Water	P S	8/82	A	Cement plant, rock crushing	New kilns in Louisville; redesignate Weeping Water to secondary nonattainment; remainder of county to secondary; dust suppressants and paving in Weeping Water
<u>CO:</u>					
Lincoln	P	4/85	A	Mobile	Redesignate to unclassified, except Antelope Creek Basin, where FMVECP is to be used; TCM

^aCities unless otherwise noted.

^bNonattainment violation indicated by pollutant and as P = primary and S = secondary.

^cA = Approved; C = Conditionally Approved; D = Disapproved; I = Incomplete; R = Under Review.

^dSee p. vii for a listing of the abbreviations.

**TABLE VII.31 Nebraska: PSD
Class I Areas**

Location	Area Name	Acreage
None		

**TABLE VII.32 Nebraska: Recommended
Class I Areas**

Area Name	Total Acreage	Acreage Already Class I
None		

**TABLE VII.33 Nebraska: Areas That Cannot Be Reclassified as
Class III**

Area Name	Total Acreage	Acreage Already Class I
National Wild and Scenic Rivers:		
Missouri River	14,941 ^a	-
National Wildlife Refuges:		
Crescent Lake	45,818	-
Fort Niobrara	18,667	-
Valentine	67,096	-

^aIncludes acreage in South Dakota.

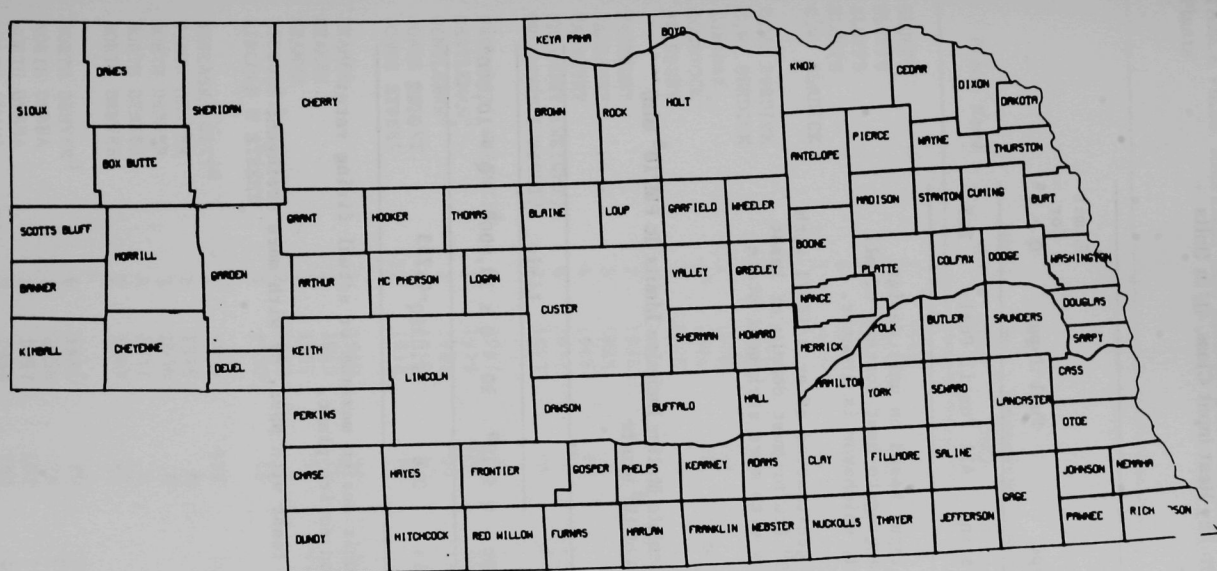


FIGURE VII.15 Nebraska: Key to Counties

TABLE VII.34 Nebraska: SO₂ Emission Limits (lb SO₂/10⁶ Btu) by Heat Input Class, Q, in Units of 10⁶ Btu/hr

Source Type	Fuel Type	Limit for Q > 0 ^a
New ^b and Existing	All Fossil Fuels	2.5

^aTotal heat input based on unit design maximum or aggregate heat content of all fuels burned, whichever is greater.

^bNew sources constructed after 8/17/71 with Q > 250 x 10⁶ Btu/hr must comply at least with NSPS, or with more stringent state standards.

TABLE VII.35 Nebraska: Particulate Matter Emission Limits (lb PM/10⁶ Btu) by Heat Input Class, Q, in Units of 10⁶ Btu/hr

Source Type	Fuel Type	Limit		
		Q ≤ 10 ^a	10 < Q ≤ 10,000 ^a	Q > 10,000 ^a
New ^b and Existing	All Fuels	0.6	1.026Q ^{-0.233}	0.12

^aTotal heat input based on unit design maximum or actual firing rate; allowable emissions based on entire plant.

^bNew sources must comply at least with NSPS, or with more stringent state standards.

TABLE VII.36 Nebraska: SO₂ Emission Limits for Electrical Utility Generating Plants

Plant Name	Unit ID	Year on Line	Capacity (MW)	Emission Limits (lb/10 ⁶ Btu)		Oil/ Gas	Averaging Period (hr)
				Stated Coal ^a	Equiv. Annual Avg. ^b		
BLUFFS	1	1940	2			2.50	2
BLUFFS	2	1946	6			2.50	2
BLUFFS	3	1951	8			2.50	2
BLUFFS	4	1963	28			2.50	2
C.W. BURDICK	1	1957	16			2.50	2
C.W. BURDICK	2	1963	21			2.50	2
C.W. BURDICK	3	1971	52			2.50	2
CANADAY	1	1958	108			2.50	2
COMSTOCK ^d	1 ^c	1994	600	0.38			
FAIRBURY	1	1948	4			2.50	
FAIRBURY	2	1938	3			2.50	
FAIRBURY	3	1928	2			2.50	
FAIRBURY	4	1965	13			2.50	
FREEMONT (WRIGHT)	6	1957	16	2.50	1.96		2
FREEMONT (WRIGHT)	7	1963	24	2.50	1.96		2
FREEMONT (WRIGHT) ^d	8	1977	85	1.20	0.94		2
GENTLEMAN ^d	1	1979	600	1.20	0.94	0.80	2
GENTLEMAN ^d	2	1981	600	1.20			
JONES STREET	11	1949	37			2.50	2
JONES STREET	12	1951	46			2.50	2
KRAMER	1	1949	35	2.50	1.96		2
KRAMER	2	1949	35	2.50	1.96		2
KRAMER	3	1951	35	2.50	1.96		2
LINCOLN K STREET	2	1929	3			2.50	
LINCOLN K STREET	3	1950	13			2.50	
NEBRASKA CITY ^d	1	1979	575	1.20	0.94		2
NORTH DENVER	2	1948	6			2.50	
NORTH DENVER	3	1950	6			2.50	
NORTH DENVER	4	1957	7			2.50	
NORTH DENVER	5	1967	22			2.50	
NORTH DENVER ^d	6	1981	70	1.20			
NORTH OMAHA	1	1954	76	2.50	1.96		2
NORTH OMAHA	2	1957	102	2.50	1.96		2
NORTH OMAHA	3	1959	102	2.50	1.96		2
NORTH OMAHA	4	1963	131	2.50	1.96		2

TABLE VII.36 Nebraska (Cont'd)

Plant Name	Unit ID	Year on Line	Capacity (MW)	Emission Limits (lb/10 ⁶ Btu)		Oil/ Gas	Averaging Period (hr)
				Stated Coal ^a	Equiv. Annual Avg. ^b		
NORTH OMAHA	5	1968	219	2.50	1.96		2
PINE STREET	3	1939	5			2.50	
PINE STREET	4	1950	8			2.50	
PLATTE ^d	1	1982	100	1.20			
SCHUYLER	1	1958	6			2.50	
SCHUYLER	2	1954	3			2.50	
SHELDON	1	1961	105	2.50	1.96		2
SHELDON	2	1965	112	2.50	1.96		2

^aLimit as stated in regulations.

^bEquivalent coal limit to account for variability of sulfur content.

^cUnit not on line in 1984.

^dNSPS unit.

**APPENDIX VIII,
FEDERAL REGION VIII**

**COLORADO
MONTANA
NORTH DAKOTA
SOUTH DAKOTA
UTAH
WYOMING**

TABLE VIII.1 Colorado: Summary of Air-Quality Attainment

Air Quality Status	Pollutant				
	SO ₂ ^a	TSP ^{a,b}	CO	O ₃	NO _x
Attainment					
No. of Counties Containing NA Areas in 1981	0/0	11/2	9	6	1
No. of Counties Containing NA Areas in 1987	0/0	6/3	8	6	0
State Implementation Plan ^c	N/N	C/S	S	A	N
Improvement (1981 to 1987)					
No. of Counties that Changed from Primary NA to Secondary NA	0	3	d	d	d
No. of Counties that Changed from Secondary NA to Full Attainment	0	0	d	d	d
No. of Counties that Changed from Primary NA to Full Attainment	0	2	1	0	1
Total No. of Counties that Improved	0	5	1	0	1
Deterioration (1981 to 1987)					
No. of Counties that Changed from Secondary NA to Primary NA	0	0	d	d	d
No. of Counties that Changed from Full Attainment to Secondary NA	0	0	d	d	d
No. of Counties that Changed from Full Attainment to Primary NA	0	0	0	0	0
Total No. of Counties that Deteriorated	0	0	0	0	0

^aWhen two values given: Primary NA/Secondary NA.

^bTSP standard replaced by fine particulate standard (PM₁₀) on July 31, 1987. See Sec. 2 of the report summary for details on PM₁₀ and a full list of Group I and II areas. Colorado: Group I counties = 9; Group II counties = 10.

^cA = Approved; C = Conditionally Approved; D = Disapproved; E = Extended Deadline; I = Incomplete; N = Not Required; R = Under Review; S = see SIP summary.

^dNo secondary standard exists for CO, O₃, or NO_x.

TABLE VIII.2 Colorado: Comparison of 1981 and 1987 County Nonattainment Designations^a

County Code	County	SO ₂				TSP				CO		O ₃		NO _x	
		Prim		Sec		Prim		Sec		Prim		Prim		Prim	
		81	87	81	87	81	87	81	87	81	87	81	87	81	87
8001	ADAMS					P	P			W	P	W	P		
8005	ARAPAHOE					P	P			W	P	W	P		
8013	BOULDER					W			P	W	P	W	P		
8031	DENVER					W	W			W	W	W	W	P	
8035	DOUGLAS					P				W		W	W		
8041	EL PASO					P	P			P	P				
8059	JEFFERSON					W	P			W	P	W	W		
8069	LARIMER					P		P	P	P	P				
8077	MESA					P	P								
8101	PUEBLO					P									
8123	WELD					P		P	P	P	P				

^aP = part of county, W = whole county.

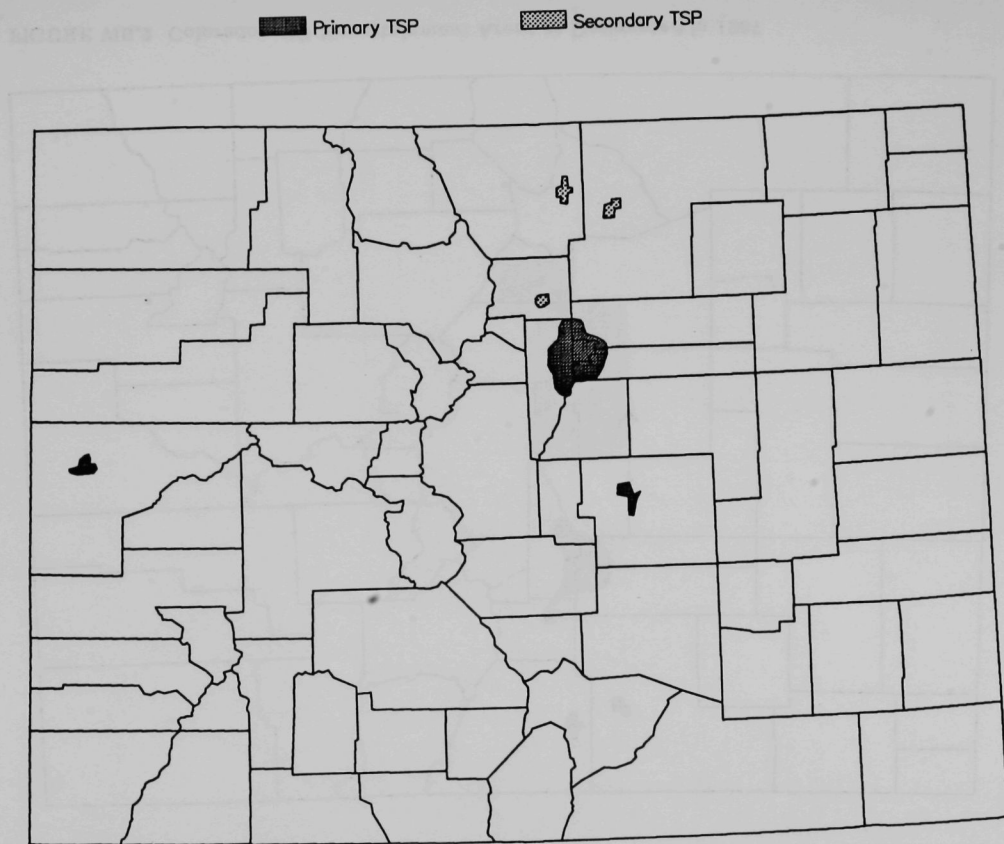


FIGURE VIII.1 Colorado: TSP Nonattainment Areas as Designated in 1987

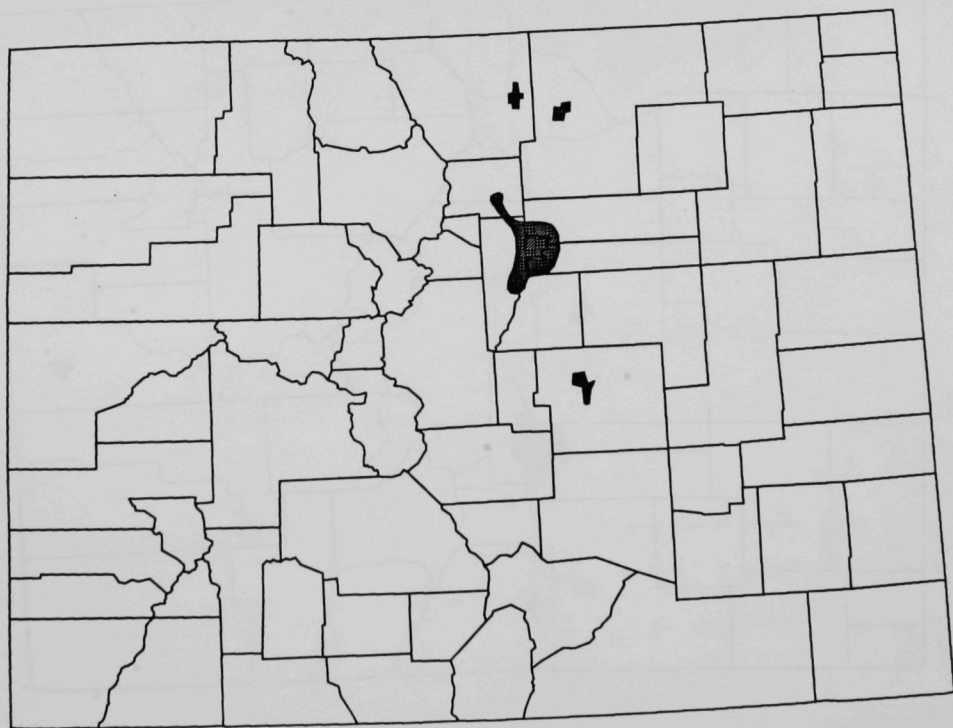


FIGURE VIII.2 Colorado: CO Nonattainment Areas as Designated in 1987

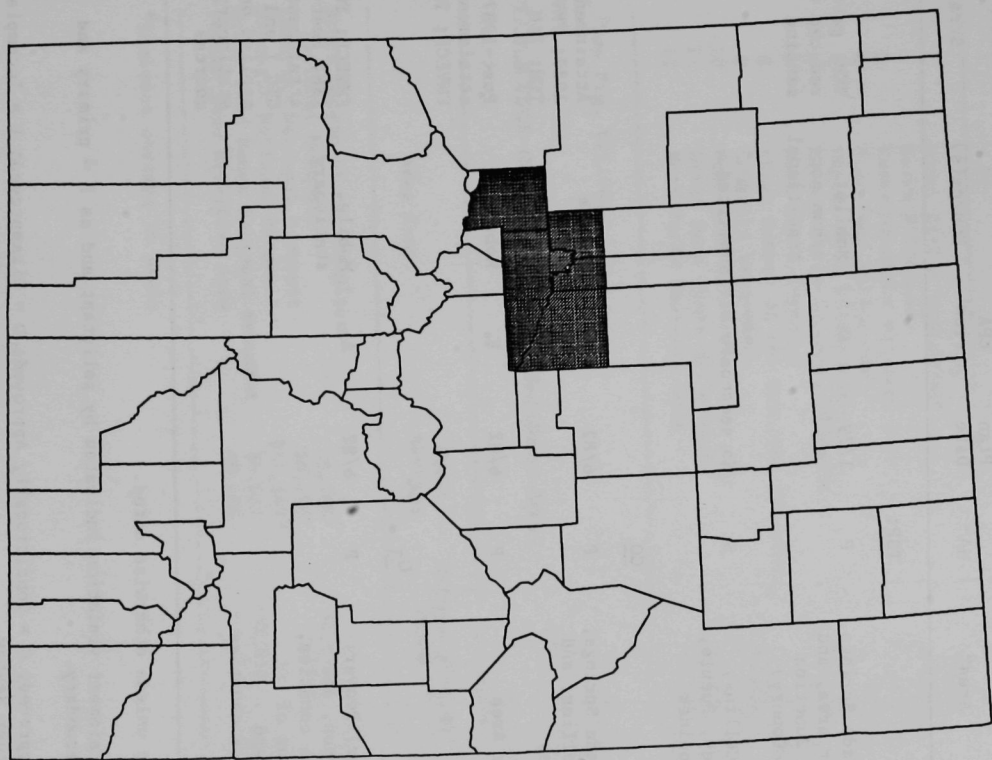


FIGURE VIII.3 Colorado: O₃ Nonattainment Areas as Designated in 1987

TABLE VIII.3 Colorado: Synopsis of SIP Attainment Strategies for Areas Currently in Violation of NAAQS

Area ^a	NA ^b	Plan Date	EPA Action ^c	Source(s)	Strategy ^d
<u>TSP:</u>					
Colorado Springs, Denver area, and Grand Junction (Mesa County)	P	1/79	C	Mobile; urban non-traditional	TCM; paving; reduced winter sanding
Fort Collins, Greeley, Pueblo, and Boulder	S	No secondary SIP submitted			
<u>CO</u>					
Colorado Springs, Ft. Collins, and Greeley	P	6/82	A	Mobile	Attainment by 1987; FMVECP; TCM; I&M
Denver Area	P	6/82	R	Mobile	Post-1987 attainment; FMVECP; TCM; I&M
<u>O₃</u>					
Boulder, Denver, Jefferson, and Douglas counties, portions of Adams and Arapahoe counties	P	6/82	A	Mobile, stationary	FMVECP; TCM; I&M; Post-1987 attainment; CTG I and II ^e applied on stationary sources

^aCities unless otherwise noted.

^bNonattainment violation indicated by pollutant and as P = primary and S = secondary.

^cA = Approved; C = Conditionally Approved; D = Disapproved; I = Incomplete; R = Under Review.

^dSee p. vii for a listing of the abbreviations.

^eCTG = Control Technology Guidelines (for stationary sources).

TABLE VIII.4 Colorado: PSD Class I Areas

Location ^a	Area Name	Acreage
1	Mount Zirkel Wilderness	72,472
2	Rawah Wilderness	26,674
3	Rocky Mountain National Park	265,200
4	Flat Tops Wilderness	235,230
5	Eagles Nest Wilderness	133,910
6	Maroon Bells-Snowmass Wilderness	71,060
7	West Elk Wilderness	61,412
8	Black Canyon of the Gunnison Wilderness	11,180
9	LaGarita Wilderness	48,486
10	Weminuche Wilderness	400,907
11	Great Sand Dunes Wilderness	33,450
12	Mesa Verde National Park	52,085

^aSee Fig. VIII.4.

TABLE VIII.5 Colorado: Recommended Class I Areas

Area Name	Total Acreage	Acreage Already Class I
Black Canyon of the Gunnison National Monument	20,766	11,180
Colorado National Monument	20,454	-
Dinosaur National Monument	211,142 ^a	-
Great Sand Dunes National Monument	36,662	33,450
Powder Horn Primitive Area	40,400	-

^aIncludes acreage in Utah.

**TABLE VIII.6 Colorado: Areas That Cannot Be Reclassified
as Class III**

Area Name	Total Acreage	Acreage Already Class I
National Monuments:		
Black Canyon of the Gunnison	20,766	11,180
Colorado	20,454	-
Dinosaur	211,142 ^a	-
Great Sand Dunes	38,662	33,450
National Primitive Areas:		
Powder Horn	40,400	-
National Recreation Areas:		
Arapaho	36,200	-
Curecanti	42,114	-
National Wildlife Refuges:		
Alamosa	10,356	-
Arapaho	14,581	-
Browns Park	13,375	-
Monte Vista	14,288	-
National Wilderness Areas:		
Big Blue	98,320	-
Collegiate Peaks	166,654	-
Commanche Peak	66,791	-
Holy Cross	122,388	-
Hunter Frying Pan	74,250	-
Indian Peaks	70,374	-
LaGarita	60,000	48,486
Lizard Head	45,600	-
Lost Creek	106,000	-
Maroon Bells-Snowmass	103,000	71,060
Mt. Evans	74,401	-
Mt. Massive	27,980	-
Mt. Sneffels	16,200	-
Mt. Zirkel	68,500	72,472
Never Summer	14,100	-
Raggeds	59,519	-
Rawah	48,930	26,674
South San Juan	130,000	-
Weminuche	66,000	400,907
West Elk	133,000	61,412

^aIncludes acreage in Utah.

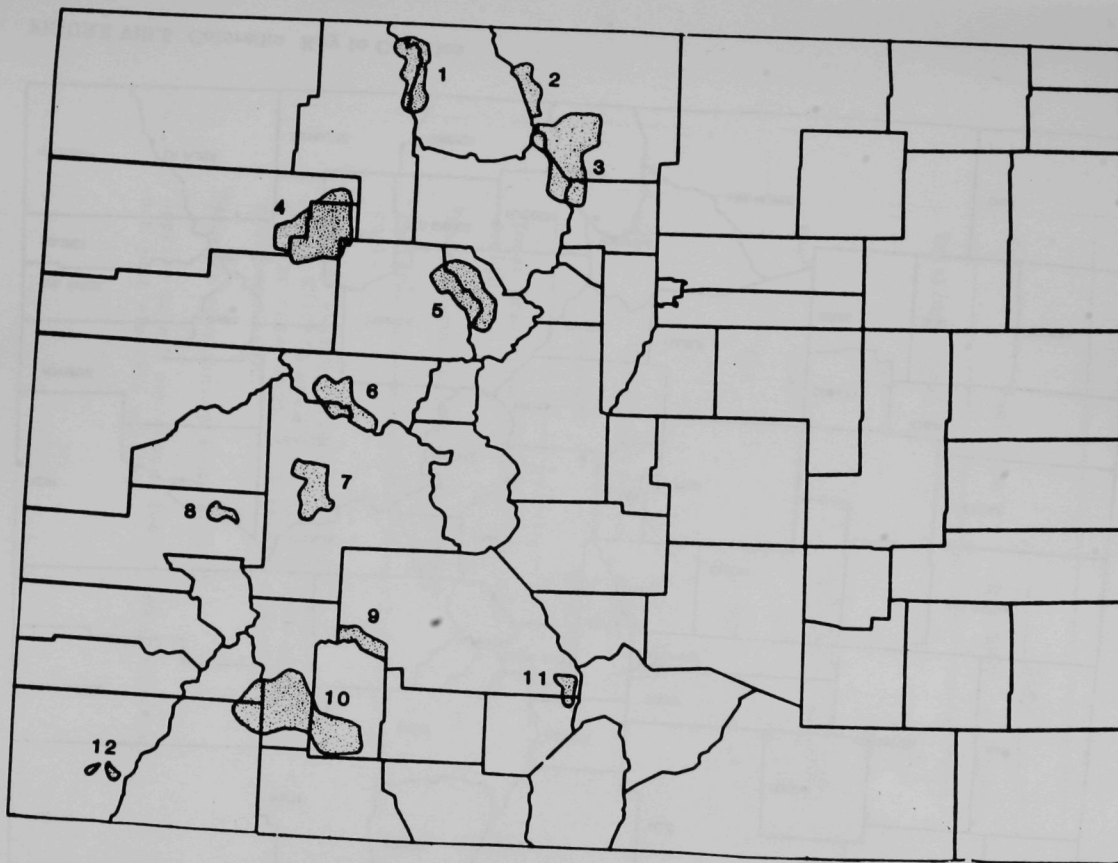


FIGURE VIII.4 Colorado: PSD Class I Areas

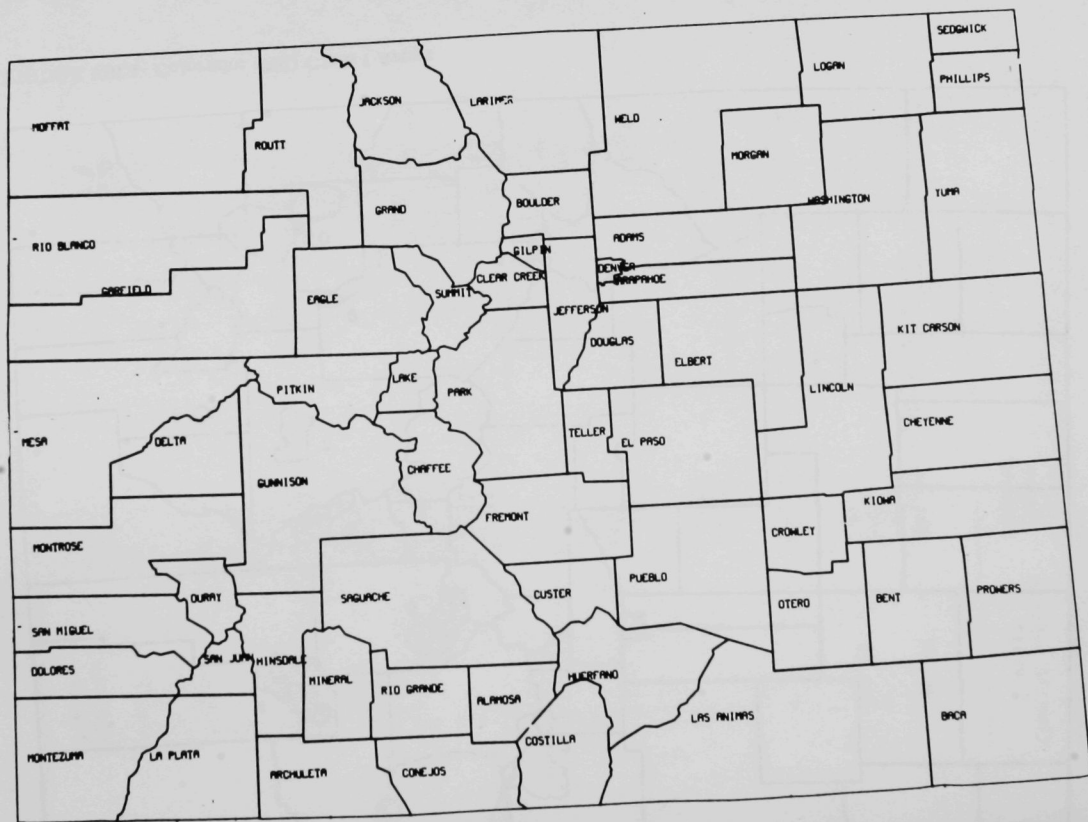


FIGURE VIII.5 Colorado: Key to Counties

**TABLE VIII.7 Colorado: SO₂ Emission Limits
(lb SO₂/10⁶ Btu) by Heat Input Class, Q, in Units
of 10⁶ Btu/hr**

Sources	Fuel Type	Limit	
		Q < 300 ^a	Q ≥ 300 ^a
Existing	Coal	1.8	1.2
	Oil	1.5	0.8
New ^b		Q < 250 ^a	Q ≥ 250 ^a
	Coal ^c	1.2	0.4 ^d
	Oil	0.8	0.3 ^d
		Q ≥ 250 ^e	
New ^f	Coal/Coal Derived	NSPS (1.2)	
	Oil/Gas	NSPS (0.8)	

^aTotal heat input (10⁶ Btu/hr) based on unit design.

^bSources constructed after 8/11/77.

^cIncludes sources converted from other fuels to coal.

^dSources with Q > 250 x 10⁶ Btu/hr constructed after 8/17/71 and before 8/30/85 must comply with at least NSPS, or with more stringent state standards.

^eSources constructed after 8/30/85.

^fApplies to all new fossil fuel steam generators, not just electric utility.

**TABLE VIII.8 Colorado: Particulate Matter Emission Limits
(lb PM/10⁶ Btu) for Heat Input Class, Q, in Units of 10⁶ Btu/hr**

Source Type	Fuel Type	Limit		
		0 < Q ≤ 1	1 < Q ≤ 500 ^a	Q > 500 ^a
Existing ^b	All Fuels	0.5	0.5Q ^{-0.26}	0.10
New ^c	All Fuels	0.03	0.03	0.03

^aTotal heat input based on aggregate of all fuels burned by individual units; allowable emissions based on individual stack.

^bSources with Q > 250 x 10⁶ Btu/hr must comply with at least NSPS, or with more stringent state standards.

^cSources constructed after 8/30/85.

TABLE VIII.9 Colorado: SO₂ Emission Limits for Electrical Utility Generating Plants

Plant Name	Unit ID	Year on Line	Capacity (MW)	Emission Limits (lb/10 ⁶ Btu)			Averaging Period (hr)
				Stated Coal ^a	Equiv. Annual Avg. ^b	Oil/Gas	
ALAMOSA	4	1938	2			1.50	
ALAMOSA	5	1947	5			1.50	
ALAMOSA	6	1953	10			1.50	
ARAPAHOE	1	1950	45	1.20	0.94		2
ARAPAHOE	2	1951	45	1.20	0.94		2
ARAPAHOE	3	1951	45	1.20	0.94		2
ARAPAHOE	4	1955	101	1.20	0.94		2
BIRDSALL	1	1953	17			1.50	2
BIRDSALL	2	1954	17			1.50	2
BIRDSALL	3	1957	23			1.50	2
BULLOCK	1	1951	6	1.80			
BULLOCK	2	1953	6	1.80			
CAMEO	1	1957	24	1.20	0.94	0.80	2
CAMEO	2	1960	52	1.20	0.94		2
CHEROKEE	1	1957	104	1.20	0.94		2
CHEROKEE	2	1959	107	1.20	0.94		2
CHEROKEE	3	1962	156	1.20	0.94		2
CHEROKEE	4	1968	339	1.20	0.94		2
CLARK	1	1955	19	1.80	1.41		2
CLARK	2	1959	24	1.80	1.41		2
COMANCHE	1	1973	325	1.20	0.94	0.80	2
COMANCHE ^d	2	1976	335	1.20	0.94	0.80	2
CRAIG	1	1980	400	0.20			
CRAIG ^d	2	1979	380	0.20	0.16	0.80	2
CRAIG ^d	3	1983	400	0.20	0.19		720
DRAKE, MARTIN	1	1945	5			1.50	
DRAKE, MARTIN	3	1932	5			1.50	
DRAKE, MARTIN	4	1949	11			1.50	
DRAKE, MARTIN	5	1962	52	1.20	0.94		2
DRAKE, MARTIN	6	1968	80	1.20	0.94		2
DRAKE, MARTIN	7	1974	132	1.20	0.94		2
DRAKE, MARTIN	2A	1925	3			1.50	
DRAKE, MARTIN	2B	1925	3			1.50	
FUTURE ^d	1 ^c	1991	470	0.40	0.38		720
FUTURE ^d	2 ^c	1994	470	0.40	0.38		720

TABLE VIII.9 Colorado (Cont'd)

Plant Name	Unit ID	Year on Line	Capacity (MW)	Emission Limits (lb/10 ⁶ Btu)			Averaging Period (hr)
				Stated Coal ^a	Equiv. Annual Avg. ^b	Oil/Gas	
FUTURE ^d	3 ^c	1995	470	0.40	0.38		720
FUTURE ^d	4 ^c	1998	470	0.40	0.38		720
FUTURE ^d	5 ^c	1999	470	0.40	0.38		720
HAYDEN	1	1965	183	1.20	0.94	0.80	2
HAYDEN ^d	2	1976	261	1.20	0.94	0.80	2
LAMAR	1	1929	2				2
LAMAR	2	1939	3				2
LAMAR	3	1952	6				2
LAMAR	4	1972	28				2
NIXON ^d	1	1980	205	1.20	0.94		2
NIXON ^d	2 ^c	1992	500	0.40	0.38		720
NUCLA	1	1959	12	1.80	1.41		2
NUCLA	2	1959	12	1.80	1.41		2
NUCLA	3	1959	12	1.80	1.41		2
PAWNEE ^d	1	1981	550	1.20			
PAWNEE ^d	2 ^c	1989	470	0.40	0.38		720
PUEBLO	4	1922	7			1.50	2
PUEBLO	5	1941	8			1.50	2
PUEBLO	6	1949	19			1.50	2
RAWHIDE ^d	1	1984	250	0.13	0.12		720
ROCKY FORD	1	1951	9			1.50	2
SOUTHWEST	1		500	0.40	0.38		720
SOUTHWEST	2 ^c	1988	400	0.40	0.38		720
TRINIDAD	1	1950	4			1.50	
TRINIDAD	2	1950	4			1.50	
UNNAMED ^d	1 ^c	1995	350	0.40	0.38		720
UNNAMED ^d	2 ^c	1998	350	0.40	0.38		720
UNNAMED ^d	3 ^c	1999	400	0.40	0.38		720
UNNAMED ^d	4 ^c	1999	400	0.40	0.38		720
VALMONT	1	1924	18			0.80	2

TABLE VIII.9 Colorado (Cont'd)

Plant Name	Unit ID	Year on Line	Capacity (MW)	Emission Limits (lb/10 ⁶ Btu)			Averaging Period (hr)
				Stated Coal ^a	Equiv. Annual Avg. ^b	Oil/Gas	
VALMONT	2	1926	18			0.80	2
VALMONT	3	1937	18			0.80	2
VALMONT	4	1941	18			0.80	2
VALMONT	5	1964	175	1.20	0.94	0.80	2
ZUNI	1	1948	39			0.80	2
ZUNI	2	1954	68			0.80	2

^aLimit as stated in regulations.

^bEquivalent coal limit to account for variability of sulfur content.

^cUnit not on line in 1984.

^dNSPS unit.

TABLE VIII.10 Montana: Summary of Air-Quality Attainment

Air Quality Status	Pollutant				
	SO ₂ ^a	TSP ^{a,b}	CO	O ₃	NO _x
Attainment					
No. of Counties Containing NA Areas in 1981	3/0	4/4	3	1	0
No. of Counties Containing NA Areas in 1987	2/0	3/5	3	0	0
State Implementation Plan ^c	S/N	S/S	S	N	N
Improvement (1981 to 1987)					
No. of Counties that Changed from Primary NA to Secondary NA	0	1	d	d	d
No. of Counties that Changed from Secondary NA to Full Attainment	0	0	d	d	d
No. of Counties that Changed from Primary NA to Full Attainment	1	0	0	1	0
Total No. of Counties that Improved	1	1	0	1	0
Deterioration (1981 to 1987)					
No. of Counties that Changed from Secondary NA to Primary NA	0	0	d	d	d
No. of Counties that Changed from Full Attainment to Secondary NA	0	0	d	d	d
No. of Counties that Changed from Full Attainment to Primary NA	0	0	0	0	0
Total No. of Counties that Deteriorated	0	0	0	0	0

^aWhen two values given: Primary NA/Secondary NA.

^bTSP standard replaced by fine particulate standard (PM₁₀) on July 31, 1987. See Sec. 2 of the report summary for details on PM₁₀ and a full list of Group I and II areas. Montana: Group I counties = 6; Group II counties = 6.

^cA = Approved; C = Conditionally Approved; D = Disapproved; E = Extended Deadline; I = Incomplete; N = Not Required; R = Under Review; S = see SIP summary.

^dNo secondary standard exists for CO, O₃, or NO_x.

TABLE VIII.11 Montana: Comparison of 1981 and 1987 County Nonattainment Designations^a

County Code	County	SO ₂				TSP				CO		O ₃		NO _x	
		Prim		Sec		Prim		Sec		Prim		Prim		Prim	
		81	87	81	87	81	87	81	87	81	87	81	87	81	87
30013	CASCADE							P	P	P	P				
30023	DEER LODGE	P													
30029	FLAT HEAD					P	P								
30049	LEWIS AND CLARK	P	P					P	P						
30063	MISSOULA					P	P	P	P	P	P				
30087	ROSEBUD					P			P						
30093	SILVER BOW					P	P								
30111	YELLOWSTONE	P	P					P	P	P	P		W		

^aP = part of county, W = whole county.

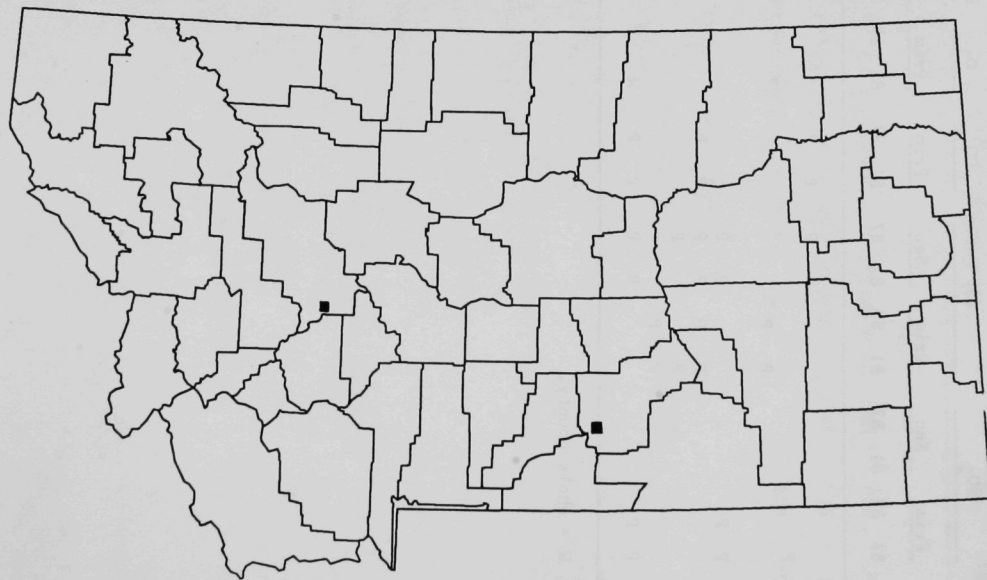


FIGURE VIII.6 Montana: SO₂ Nonattainment Areas as Designated in 1987

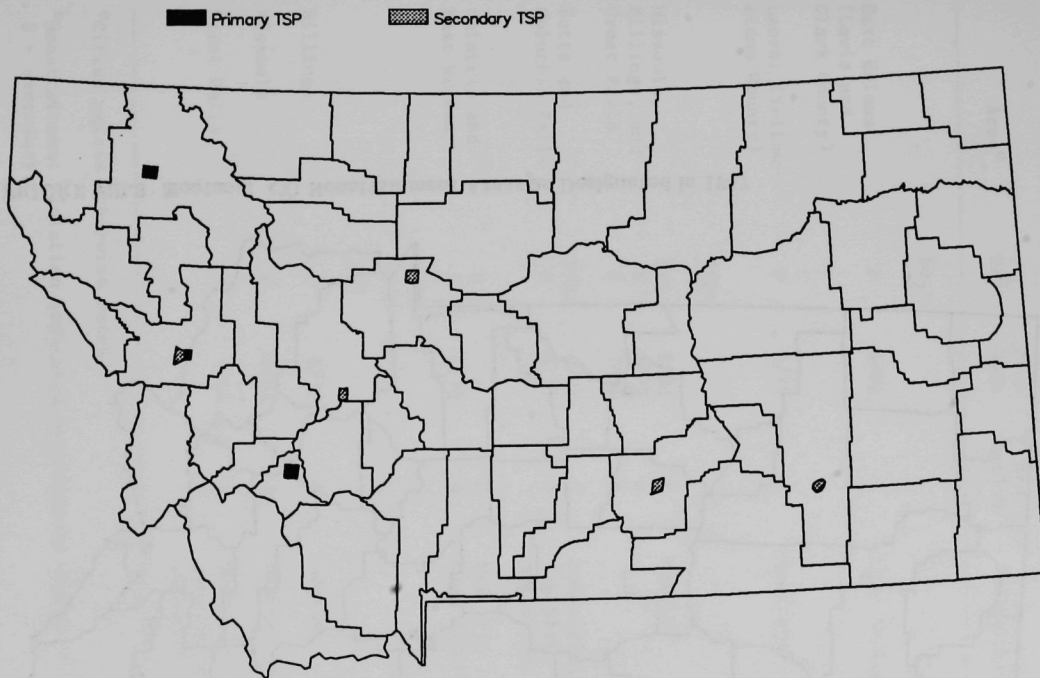


FIGURE VIII.7 Montana: TSP Nonattainment Areas as Designated in 1987

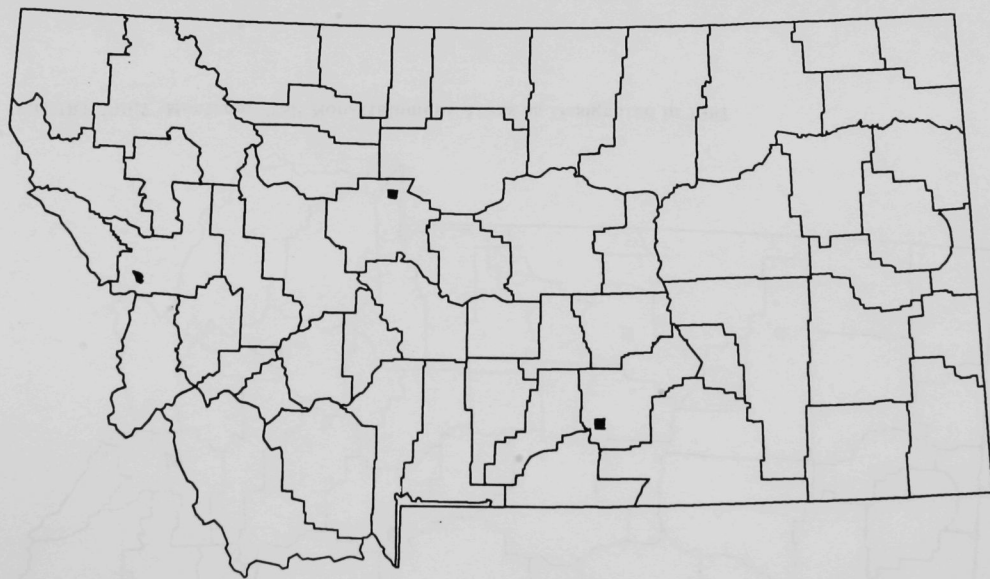


FIGURE VIII.8 Montana: CO Nonattainment Areas as Designated in 1987

TABLE VIII.12 Montana: Synopsis of SIP Attainment Strategies for Areas Currently in Violation of NAAQS

Area ^a	NA ^b	Plan Date	EPA Action ^c	Source(s)	Strategy ^d
<u>SO₂:</u>					
East Helena (Lewis and Clark County)	P	6/82	C	Lead smelter	GEP stack height
Laurel (Yellowstone County)	P	4/79	A	Refinery	GEP stack height
<u>TSP:</u>					
Missoula, Billings, and Great Falls	P/S	8/81	A	Mobile	Clean, pave streets
	S	4/79	A		
	S	3/86	R		
Butte and Columbia Falls	P/S	4/79	C	Industrial fugitive emissions	Controls to be developed
	P	4/79	A		
Colstrip and East Helena	S	4/79	C	Utility; coal mining	More stringent SIP limits; control fugitive dust
	S		A		
<u>CO:</u>					
Billings	P	4/79	A	Mobile	FMVECP; TCM
Missoula	P	8/81	A	Mobile	FMVECP
Great Falls	P	3/86	R	Mobile, petroleum refinery	FMVECP; control on emissions

^aCities unless otherwise noted.

^bNonattainment violation indicated by pollutant and as P = primary and S = secondary.

^cA = Approved; C = Conditionally Approved; D = Disapproved; I = Incomplete; R = Under Review.

^dSee p. vii for a listing of the abbreviations.

TABLE VIII.13 Montana: PSD Class I Areas

Location ^a	Area Name	Acreage
1	Glacier National Park	1,013,572
2	Cabinet Mountains Wilderness	94,272
3	Bob Marshall Wilderness	948,813
4	U.L. Bend Wilderness	20,890
5	Medicine Lake Wilderness	11,366
6	Mission Mountain Wilderness	73,877
7	Scapegoat Wilderness	239,295
8	Gates of the Mountain Wilderness	28,562
9	Anaconda-Pintlar Wilderness	157,803
10	Red Rock Lakes Wilderness	32,350
11	Yellowstone National Park	167,624 ^b
12	Northern Cheyenne Reservation ^c	444,157
13	Flathead Reservation ^c	650,000
14	Fort Peck Reservation ^c	2,000,000

^aSee Fig. VIII.9.

^bYellowstone National Park, 2,219,737 acres overall, includes areas in Idaho and Wyoming.

^cReservations have been redesignated Class I; they were not mandatory Class I areas.

TABLE VIII.14 Montana: Recommended Class I Areas

Area Name	Total Acreage	Acreage Already Class I
Beartrap Canyon Primitive Area	2,861	-
Centennial Primitive Area	24,166	-
Humbag Spires Primitive Area	7,041	-

TABLE VIII.15 Montana: Areas That Cannot Be Reclassified as Class III

Area Name	Total Acreage	Acreage Already Class I
National Primitive Areas:		
Centennial	24,166	-
Spanish Peaks	50,616	-
National Recreation Areas:		
Bighorn Canyon	120,296	-
Rattlesnake	61,000	-
National Wild and Scenic Rivers:		
Flathead River	57,400	-
Missouri River	131,838	-
National Wildlife Refuges:		
Benton Lake	12,383	-
Bowdoin	12,577	-
Charles M. Russell	896,494	-
Lake Mason	17,244	-
Medicine Lake	22,824	11,366
National Bison Range	18,541	-
Red Rock Lake	32,468	32,350
U.L. Bend	46,303	20,890
National Wilderness Areas:		
Absaroka-Beartooth	921,584	-
Bob Marshall	60,543	948,813
Great Bear	286,700	-
Lee Metcalf	248,944	-
Rattlesnake	33,000	-
Selway-Bitterroot	251,343	-
Welcome Creek	28,135	-

LINCOLN CARBON UINTEA TETON FREMONT SUBLETTE HOTCHKISS PARK JACKSON WYO. BIG HORN YELLOWSTONE
 BLAINE LIBERTY HILL PHILLIPS CONVERSE CHEYENNE LARAMIE NATRONA CARBON FOOTHILLS SHERIDAN

FIGURE VIII.10 Montana: Key to Counties

TABLE VIII.16 Montana: SO₂ Emission Limits (lb SO₂/10⁶ Btu) by Heat Input Class, Q, in Units of 10⁶ Btu/hr

Sources	Fuel Type	Limit for Q ≥ 1 ^a
New ^b and Existing ^c	Coal or Oil	1.0

^aTotal heat input based on unit actual or operating rate (10⁶ Btu/hr).

^bNew sources with Q > 250 x 10⁶ Btu/hr constructed after 8/17/71 or 9/18/78 must comply with at least NSPS, or with more stringent state standards.

^cExisting sources must be in compliance after 7/1/72.

TABLE VIII.17 Montana: Particulate Matter Emission Limits (lb PM/10⁶ Btu) for Heat Input Class, Q, in Units of 10⁶ Btu/hr

Sources	Fuel Type	Limit			
		0 < Q ≤ 10 ^a	Q = 100	Q = 1,000	Q ≥ 10,000 ^a
Existing	All Fossil Fuels	0.6	0.40	0.28	0.19
New ^b	All Fossil Fuels	0.6	0.35	0.20	0.12

^aTotal heat input based on aggregate of all fuels burned (by individual stack); allowable emissions based on individual stack.

^bNew sources constructed after 11/23/68. Sources with Q > 250 x 10⁶ Btu/hr must comply with at least NSPS, or with more stringent state standards.

TABLE VIII.18 Montana: SO₂ Emission Limits for Electrical Utility Generating Plants

Plant Name	Unit ID	Year on Line	Capacity (MW)	Emission Limits (lb/10 ⁶ Btu)			Averaging Period (hr)
				Stated Coal ^a	Equiv. Annual Avg. ^b	Oil/Gas	
COLSTRIP	1	1975	330	1.20	0.93	0.80	1
COLSTRIP ^d	2	1976	330	1.20	0.93	0.80	1
COLSTRIP ^d	3	1984	780	0.20			
COLSTRIP ^d	4 ^c	1985	780	0.20			
CORETTE, J E	1	1968	180	2.00	1.56		1
FRANK BIRD	1	1951	70			2.00	1
GLENDIVE	1	1926	3			2.00	
GLENDIVE	2	1939	3			2.00	
LEWIS & CLARK	1	1958	44	2.00	1.56		1
RESOURCE ^d	89 ^c	1989	330	1.20			
SALEM	X ^c	1992	330	1.20			
UNNAMED ^d	1 ^c	1990	500	1.20	1.13		720
UNNAMED ^d	2 ^c	1992	500	1.20	1.13		720

^aLimit as stated in regulations.

^bEquivalent coal limit to account for variability of sulfur content.

^cUnit not on line in 1984.

^dNSPS unit.

TABLE VIII.19 North Dakota: Summary of Air-Quality Attainment

Air Quality Status	Pollutant				
	SO ₂ ^a	TSP ^{a,b}	CO	O ₃	NO _x
Attainment					
No. of Counties Containing NA Areas in 1981	0/0	0/0	0	0	0
No. of Counties Containing NA Areas in 1987	0/0	0/0	0	0	0
State Implementation Plan ^c	N/N	N/N	N	N	N
Improvement (1981 to 1987)					
No. of Counties that Changed from Primary NA to Secondary NA	0	0	d	d	d
No. of Counties that Changed from Secondary NA to Full Attainment	0	0	d	d	d
No. of Counties that Changed from Primary NA to Full Attainment	0	0	0	0	0
Total No. of Counties that Improved	0	0	0	0	0
Deterioration (1981 to 1987)					
No. of Counties that Changed from Secondary NA to Primary NA	0	0	d	d	d
No. of Counties that Changed from Full Attainment to Secondary NA	0	0	d	d	d
No. of Counties that Changed from Full Attainment to Primary NA	0	0	0	0	0
Total No. of Counties that Deteriorated	0	0	0	0	0

^aWhen two values given: Primary NA/Secondary NA.

^bTSP standard replaced by fine particulate standard (PM₁₀) on July 31, 1987. See Sec. 2 of the report summary for details on PM₁₀ and a full list of Group I and II areas. North Dakota: Group I counties = 0; Group II counties = 0.

^cA = Approved; C = Conditionally Approved; D = Disapproved; E = Extended Deadline; I = Incomplete; N = Not Required; R = Under Review; S = see SIP summary.

^dNo secondary standard exists for CO, O₃, or NO_x.

TABLE VIII.20 North Dakota: Comparison of 1981 and 1987 County Nonattainment Designations

County Code	County	SO ₂				TSP				CO		O ₃		NO _x	
		Prim		Sec		Prim		Sec		Prim		Prim		Prim	
		81	87	81	87	81	87	81	87	81	87	81	87	81	87

No nonattainment areas in North Dakota.

TABLE VIII.21 North Dakota: PSD Class I Areas

Location ^a	Area Name	Acreage
1	Lostwood Wilderness	5,557
2	Theodore Roosevelt National Park	70,416

^aSee Fig. VIII.11.

TABLE VIII.22 North Dakota: Recommended Class I Areas

Area Name	Total Acreage	Acreage Already Class I
None		

TABLE VIII.23 North Dakota: Areas That Cannot Be Reclassified as Class III

Area Name	Total Acreage	Acreage Already Class I
National Wildlife Refuges:		
Arrowwood	13,346	-
Audubon	14,776	-
Des Lacs	19,544	-
J. Clark Salyer	58,694	-
Long Lake	13,749	-
Lostwood	24,810	5,557
Upper Souris	32,092	-

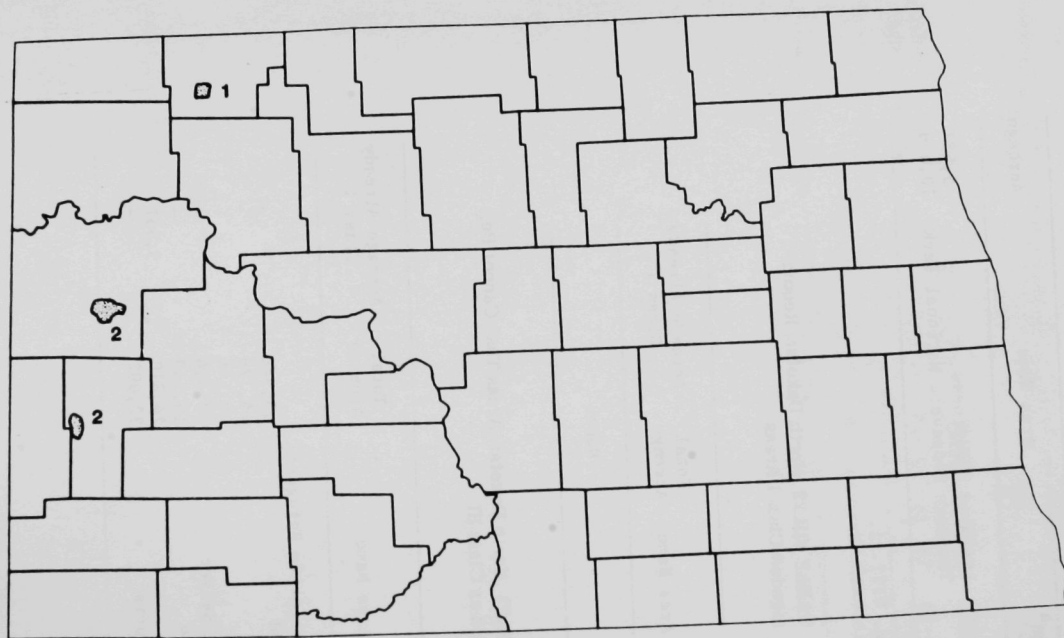


FIGURE VIII.11 North Dakota: PSD Class I Areas

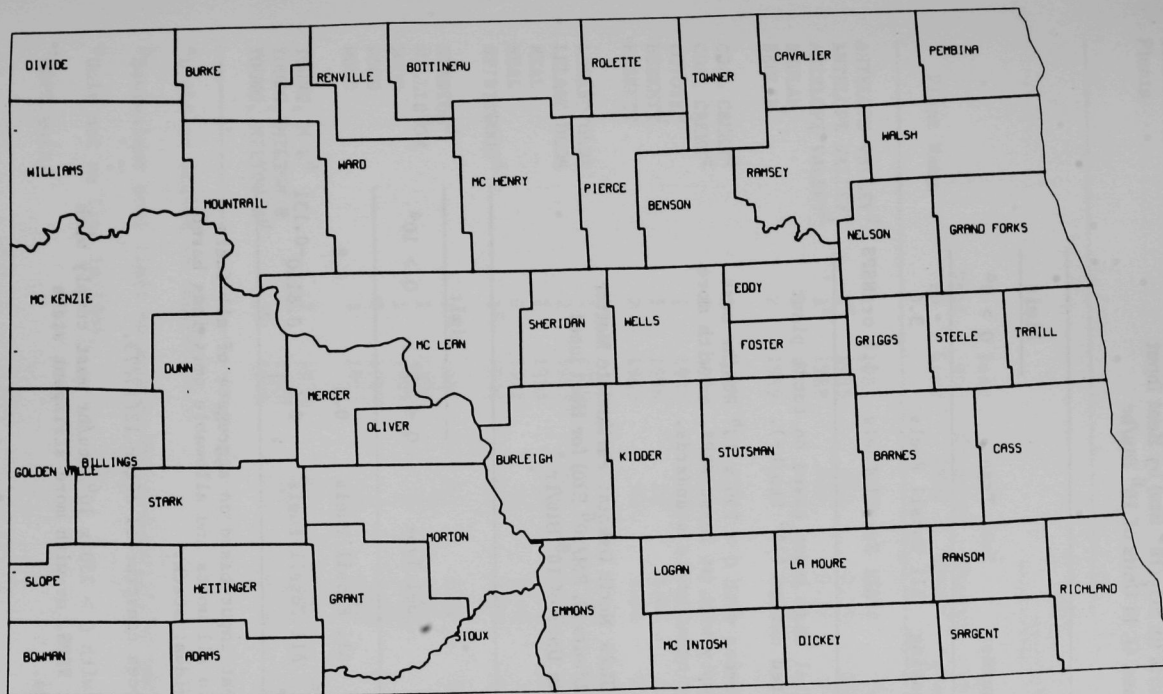


FIGURE VIII.12 North Dakota: Key to Counties

TABLE VIII.24 North Dakota: SO₂ Emission Limits (lb SO₂/10⁶ Btu) by Heat Input Class, Q, in Units of 10⁶ Btu/hr

Sources	Fuel Type	Limit
		Q > 0 ^a
Existing	All Fossil Fuels	3.0
New ^b	All Fossil Fuels	3.0 or NSPS

^aTotal heat input based on total plant rated design (10⁶ Btu/hr).

^bSources with Q > 250 x 10⁶ Btu/hr must comply with at least NSPS, or with more stringent state standards.

TABLE VIII.25 North Dakota: Particulate Matter Emission Limits (lb PM/10⁶ Btu) for Heat Input Class, Q, in Units of 10⁶ Btu/hr

Sources	Fuel Type	Limit	
		Q ≤ 10 ^a	Q > 10 ^a
Existing	All Fossil Fuels	0.8	0.8
New ^{b,c}	All Fossil Fuels	0.6	0.811Q ^{-0.131}

^aTotal heat input based on aggregate of all fuels burned in all units and allowable emissions based on individual stack.

^bNew sources constructed after 12/15/73.

^cSources with Q > 250 x 10⁶ Btu/hr must comply with at least NSPS, or with more stringent state standards.

TABLE VIII.26 North Dakota: SO₂ Emission Limits for Electrical Utility Generating Plants

Plant Name	Unit ID	Year on Line	Capacity (MW)	Emission Limits (lb/10 ⁶ Btu)		Oil/ Gas	Averaging Period (hr)
				Stated Coal ^a	Equiv. Annual Avg. ^b		
ANTELOPE VALLEY ^d	1	1983	400	0.39			
ANTELOPE VALLEY ^d	2 ^c	1985	440	0.39	0.37		720
ANTELOPE VALLEY ^d	3 ^c	1988	400	0.39	0.37		720
BEULAH	1	1919	7	3.00			
BEULAH	2	1919	7	3.00			
COAL CREEK ^d	1	1979	495	1.20	0.93		1
COAL CREEK ^d	2	1980	495	1.20			
COYOTE ^d	1	1981	410	1.20			
HESKETT	1	1954	28	3.00	2.33		1
HESKETT	2	1963	72	3.00	2.33		1
LELAND OLDS	1	1966	217	3.00	2.33	3.00	1
LELAND OLDS	2	1975	433	3.00	2.33	3.00	1
NEAL	1	1952	18	3.00	2.33	3.00	1
NEAL	2	1952	18	3.00	2.33	3.00	1
SPIRITWOOD ^d	1 ^c	1990	115	0.39	0.37		720
STANTON ^d	1	1982	167	3.00	2.33	3.00	1
WILLISTON	1	1930	2	3.00		3.00	
WOOD	1	1949	5	3.00			
WOOD	2	1950	5	3.00			
WOOD	3	1951	12	3.00			
YOUNG, M R ^d	2	1976	440	1.20	0.94		3
YOUNG, MILTON R	1	1970	240	3.00	2.33	3.00	1
YOUNG, MILTON R ^d	3 ^c	1985	408	0.39	0.37		720

^aLimit as stated in regulations.^bEquivalent coal limit to account for variability of sulfur content.^cUnit not on line in 1984.^dNSPS unit.

TABLE VIII.27 South Dakota: Summary of Air-Quality Attainment

Air Quality Status	Pollutant				
	SO ₂ ^a	TSP ^{a,b}	CO	O ₃	NO _x
Attainment					
No. of Counties Containing NA Areas in 1981	0/0	1/0	0	0	0
No. of Counties Containing NA Areas in 1987	0/0	1/0	0	0	0
State Implementation Plan ^c	N/N	A/N	N	N	N
Improvement (1981 to 1987)					
No. of Counties that Changed from Primary NA to Secondary NA	0	0	d	d	d
No. of Counties that Changed from Secondary NA to Full Attainment	0	0	d	d	d
No. of Counties that Changed from Primary NA to Full Attainment	0	0	0	0	0
Total No. of Counties that Improved	0	0	0	0	0
Deterioration (1981 to 1987)					
No. of Counties that Changed from Secondary NA to Primary NA	0	0	d	d	d
No. of Counties that Changed from Full Attainment to Secondary NA	0	0	d	d	d
No. of Counties that Changed from Full Attainment to Primary NA	0	0	0	0	0
Total No. of Counties that Deteriorated	0	0	0	0	0

^aWhen two values given: Primary NA/Secondary NA.

^bTSP standard replaced by fine particulate standard (PM₁₀) on July 31, 1987. See Sec. 2 of the report summary for details on PM₁₀ and a full list of Group I and II areas. South Dakota: Group I counties = 0; Group II counties = 1.

^cA = Approved; C = Conditionally Approved; D = Disapproved; E = Extended Deadline; I = Incomplete; N = Not Required; R = Under Review; S = see SIP summary.

^dNo secondary standard exists for CO, O₃, or NO_x.

TABLE VIII.28 South Dakota: Comparison of 1981 and 1987 County Nonattainment Designations^a

County Code	County	SO ₂				TSP				CO		O ₃		NO _x	
		Prim		Sec		Prim		Sec		Prim		Prim		Prim	
		81	87	81	87	81	87	81	87	81	87	81	87	81	87
46103	PENNINGTON					P	P								

^ap = part of county, W = whole county.



FIGURE VIII.13 South Dakota: TSP Nonattainment Areas as Designated in 1987

TABLE VIII.29 South Dakota: Synopsis of SIP Attainment Strategies for Areas Currently in Violation of NAAQS

Area ^a	NA ^b	Plan Date	EPA Action ^c	Source(s)	Strategy ^d
<u>TSP:</u>					
Rapid City	P	10/80	A	Cement plant; quarries; mobile	Pave roads, parking lots

^aCities unless otherwise noted.

^bNonattainment violation indicated by pollutant and as P = primary and S = secondary.

^cA = Approved; C = Conditionally Approved; D = Disapproved; I = Incomplete; R = Under Review.

^dSee p. vii for a listing of the abbreviations.

TABLE VIII.30 South Dakota: PSD Class I Areas

Location ^a	Area Name	Acreage
1	Wind Cave National Park	28,292
2	Badlands N.P. Wilderness	64,250

^aSee Fig. VIII.14.**TABLE VIII.31 South Dakota: Recommended Class I Areas**

Area Name	Total Acreage	Acreage Already Class I
Badlands National Park	243,302	64,250

TABLE VIII.32 South Dakota: Areas That Cannot Be Reclassified as Class III

Area Name	Total Acreage	Acreage Already Class I
National Wildlife Refuges:		
Lacreek	16,147	-
National Wilderness Areas:		
Black Elk	10,700	-
National Parks:		
Badlands	243,302	64,250

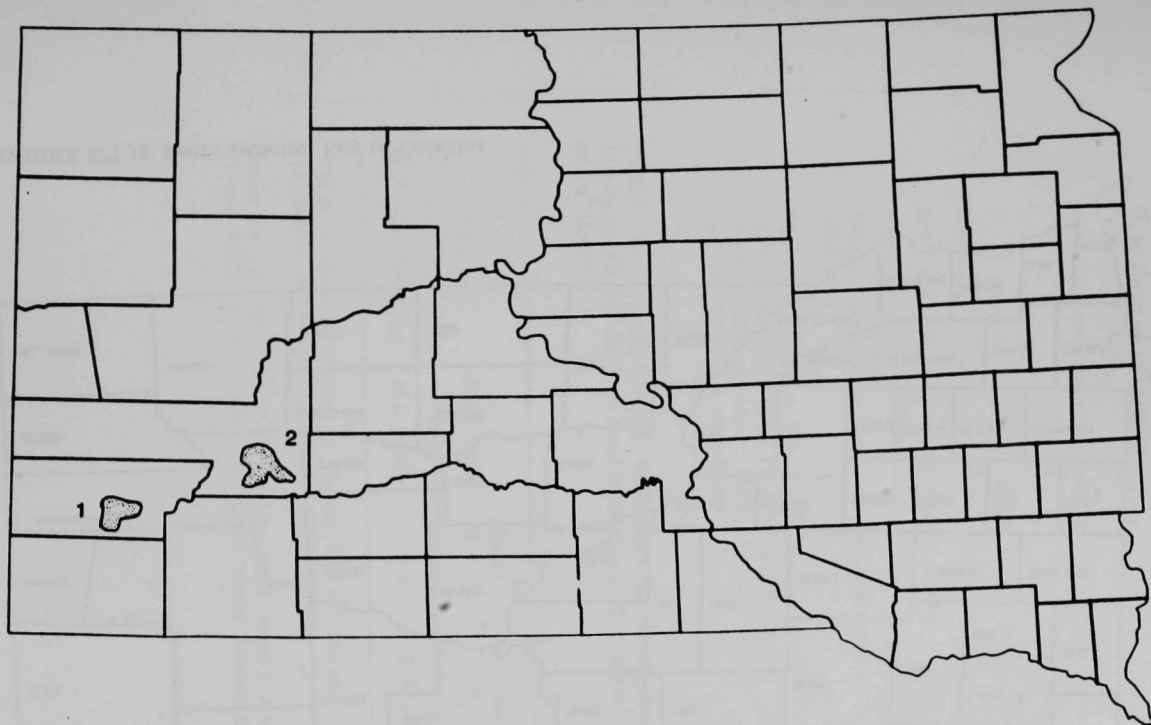


FIGURE VIII.14 South Dakota: PSD Class I Areas

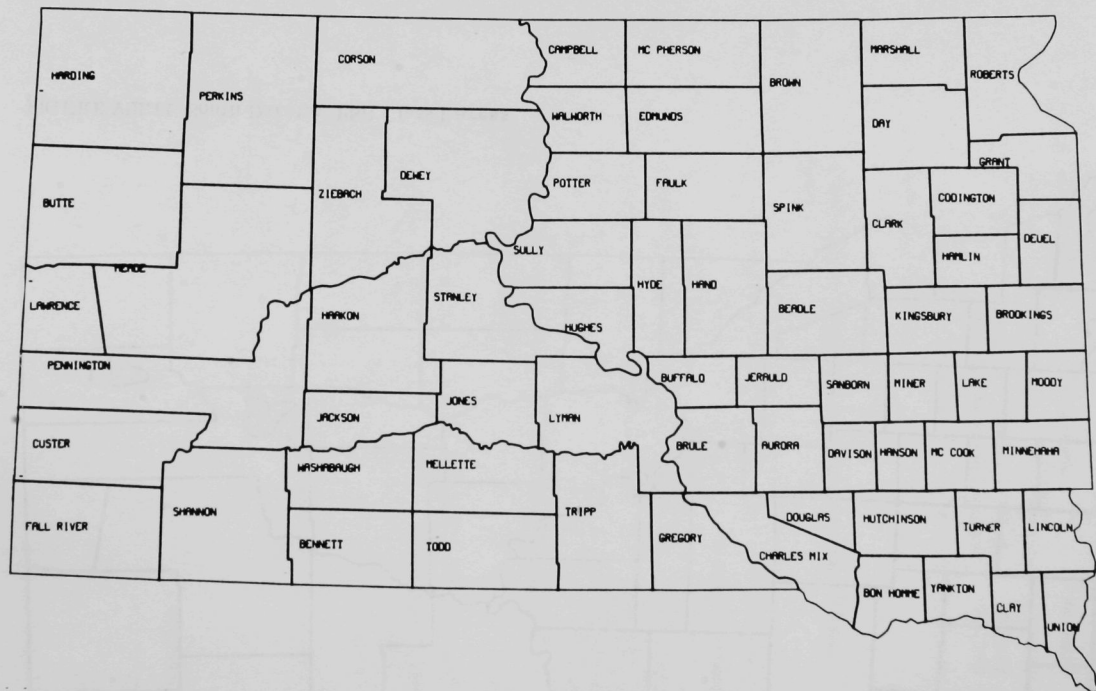


FIGURE VIII.15 South Dakota: Key to Counties

TABLE VIII.33 South Dakota: SO₂ Emission Limits (lb SO₂/10⁶ Btu) by Heat Input Class, Q, in Units of 10⁶ Btu/hr

Sources	Fuel Type	Limit for Q > 0 ^a
New ^b and Existing	All Fossil Fuels	3.0

^aTotal heat input based on maximum unit design.

^bSources with Q > 250 x 10⁶ Btu/hr constructed after 8/17/71 or 9/18/78 must comply with at least NSPS, or with more stringent state standards.

TABLE VIII.34 South Dakota: Particulate Matter Emission Limits (lb PM/10⁶ Btu) for Heat Input Class, Q, in Units of 10⁶ Btu/hr

Sources	Fuel Type	Limit for Q < 10 ^a	Limit for Q > 10 ^a
New ^b and Existing	All Fuels	0.6	0.811 Q ^{-0.131}

^aTotal heat input based on design for all units; allowable emissions based on entire plant.

^bSources with Q > 250 x 10⁶ Btu/hr must comply with at least NSPS, or with more stringent state standards.

TABLE VIII.35 South Dakota: SO₂ Emission Limits for Electrical Utility Generating Plants

Plant Name	Unit ID	Year on Line	Capacity (MW)	Emission Limits (lb/10 ⁶ Btu)			Averaging Period (hr)
				Stated Coal ^a	Equiv. Annual Avg. ^b	Oil/Gas	
ABERDEEN	3 ^c	1945	8	3.00			
BIG STONE	1	1976	430	3.00	3.00	3.00	e
FRENCH, BEN	1	1961	22	3.00	3.00	3.00	e
KIRK	1	1935	5	3.00	3.00		e
KIRK	2	1935	5	3.00	3.00		e
KIRK	3	1961	5	3.00	3.00		e
KIRK	4	1956	16	3.00	3.00		e
PATHFINDER	1	1966	65			3.00	e

^aLimit as stated in regulations.

^bEquivalent coal limit to account for variability of sulfur content.

^cUnit not on line in 1984.

^dNSPS unit.

^eLimit never to be exceeded on annual basis.

TABLE VIII.36 Utah: Summary of Air-Quality Attainment

Air Quality Status	Pollutant				
	SO ₂ ^a	TSP ^{a,b}	CO	O ₃	NO _x
Attainment					
No. of Counties Containing NA Areas in 1981	3/0	3/1	4	2	0
No. of Counties Containing NA Areas in 1987	2/0	2/0	3	2	0
State Implementation Plan ^c	C/N	A/N	S	A	N
Improvement (1981 to 1987)					
No. of Counties that Changed from Primary NA to Secondary NA	0	0	d	d	d
No. of Counties that Changed from Secondary NA to Full Attainment	0	1	d	d	d
No. of Counties that Changed from Primary NA to Full Attainment	1	1	1	0	0
Total No. of Counties that Improved	1	2	1	0	0
Deterioration (1981 to 1987)					
No. of Counties that Changed from Secondary NA to Primary NA	0	0	d	d	d
No. of Counties that Changed from Full Attainment to Secondary NA	0	0	d	d	d
No. of Counties that Changed from Full Attainment to Primary NA	0	0	0	0	0
Total No. of Counties that Deteriorated	0	0	0	0	0

^aWhen two values given: Primary NA/Secondary NA.

^bTSP standard replaced by fine particulate standard (PM₁₀) on July 31, 1987. See Sec. 2 of the report summary for details on PM₁₀ and a full list of Group I and II areas. Utah: Group I counties = 2; Group II counties = 0.

^cA = Approved; C = Conditionally Approved; D = Disapproved; E = Extended Deadline; I = Incomplete; N = Not Required; R = Under Review; S = see SIP summary.

^dNo secondary standard exists for CO, O₃, or NO_x.

TABLE VIII.37 Utah: Comparison of 1981 and 1987 County Nonattainment Designations^a

County Code	County	SO ₂				TSP				CO		O ₃		NO _x	
		Prim		Sec		Prim		Sec		Prim		Prim		Prim	
		81	87	81	87	81	87	81	87	81	87	81	87	81	87
49011	DAVIS							P		P		W	W		
49021	IRON	P													
49035	SALT LAKE	W	W			P	P			P	P	W	W		
49045	TOOELE	P	P												
49049	UTAH					P	P			P	P				
49057	WEBER					P				P	P				

^aP = part of county, W = whole county.

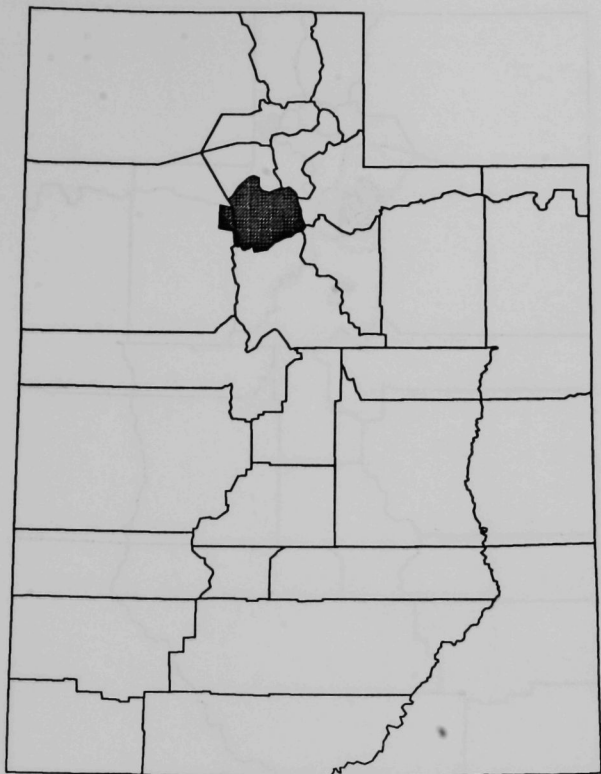


FIGURE VIII.16 Utah: SO₂ Nonattainment Areas as Designated in 1987

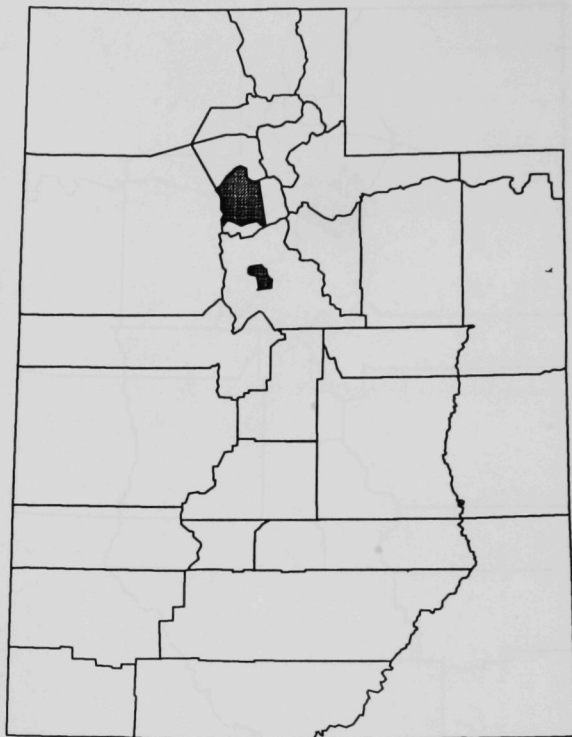


FIGURE VIII.17 Utah: TSP Nonattainment Areas as Designated in 1987

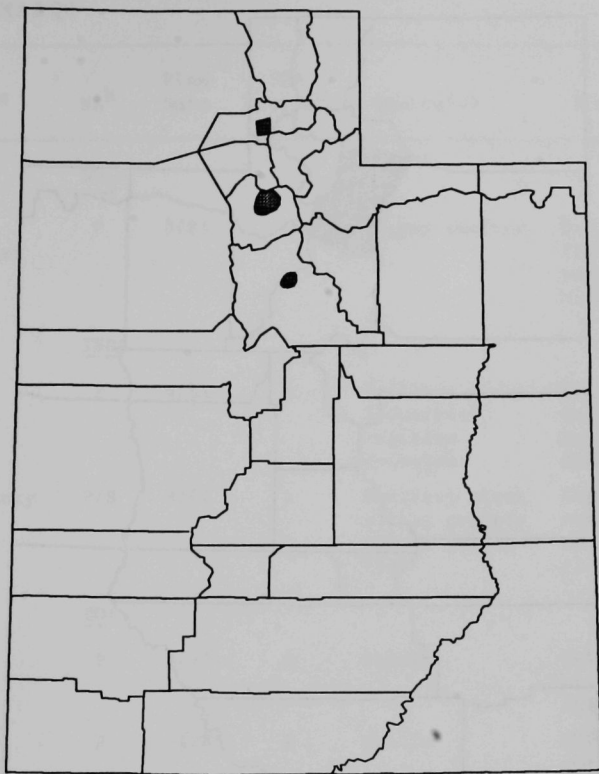


FIGURE VIII.18 Utah: CO Nonattainment Areas as Designated in 1987

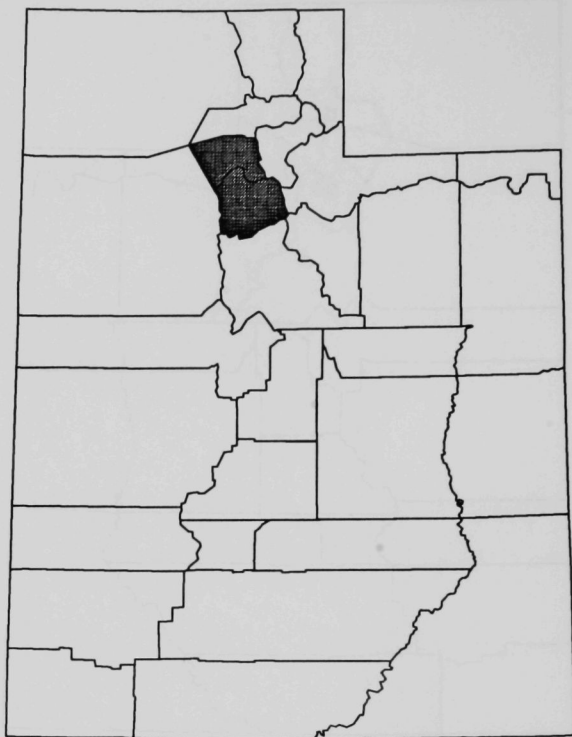


FIGURE VIII.19 Utah: O₃ Nonattainment Areas as Designated in 1987

TABLE VIII.38 Utah: Synopsis of SIP Attainment Strategies for Areas Currently in Violation of NAAQS

Area ^a	NA ^b	Plan Date	EPA Action ^c	Source(s)	Strategy ^d
<u>SO₂:</u>					
Salt Lake and Tooele counties	P	8/81	C	Copper smelter	Existing SIP limit and GEP stack height; disapproved 2/80
<u>TSP:</u>					
Utah County	P	4/81	A	Utility; industrial fugitive emissions	Compliance with existing SIP; more stringent SIP
Salt Lake County	P/S	3/82	A	Smelter; steel mills; primary metals production	Compliance with existing SIP; control of fugitive emissions
<u>CO:</u>					
Ogden	P	9/82	A	Mobile	FMVECP; TCM; attainment by 1982
Provo	P	12/85	R	Mobile	FMVECP; TCM with anti-tampering; attainment by 1987
Salt Lake City	P	12/83	A	Mobile	FMVECP; TCM; I&M; attainment by 1982
<u>O₃:</u>					
Davis and Salt Lake Cos.	P	2/84	A	Mobile, industrial processes	RACT on VOC sources; FMVECP; TCM; I&M; attainment by 1987

^aCities unless otherwise noted.

^bNonattainment violation indicated by pollutant and as P = primary and S = secondary.

^cA = Approved; C = Conditionally Approved; D = Disapproved; I = Incomplete; R = Under Review.

^dSee p. vii for a listing of the abbreviations.

TABLE VIII.39 Utah: PSD Class I Areas

Location ^a	Area Name	Acreage
1	Arches National Park	73,379
2	Capitol Reef National Park	241,904
3	Canyonlands National Park	337,570
4	Bryce Canyon National Park	35,835
5	Zion National Park	146,598

^aSee Fig. VIII.20.

TABLE VIII.40 Utah: Recommended Class I Areas

Area Name	Total Acreage	Acreage Already Class I
Cedar Breaks National Monument	6,155	-
Dark Canyon Primitive Area	57,248	-
Dinosaur National Monument	211,054 ^a	-
Grand Gulch Primitive Area	24,080	-
Natural Bridges National Monument	7,637	-
Paria Canyon Primitive Area	27,515 ^b	-

^aIncludes acreage in Colorado.

^bIncludes acreage in Arizona.

**TABLE VIII.41 Utah: Areas That Cannot Be Reclassified
as Class III**

Area Name	Total Acreage	Acreage Already Class I
National Primitive Areas:		
Dark Canyon	57,248	-
Grand Gulch	24,080	-
High Uintas	236,509	-
Paria Canyon	27,515 ^a	-
National Recreation Areas:		
Flaming Gorge	94,308	-
Glen Canyon	1,236,880 ^a	-
National Wildlife Refuges:		
Bear River	65,030	-
Fish Springs	17,992	-
Ouray	11,483	-
National Wilderness Areas:		
Box-Death Hollow	26,000	-
Dark Canyon	45,000	-
Desert Creek	25,500	-
Lone Peak	30,088	-
Mount Naomi	44,350	-
Mount Nebo	28,000	-
Mount Olympus	16,000	-
Mount Timpanagos	10,750	-
Pine Valley Mountain	50,000	-
Twin Peaks	13,100	-
Wellsville Mountain	23,850	-
National Monuments:		
Dinosaur	211,142 ^b	-

^aIncludes acreage in Arizona.

^bIncludes acreage in Colorado.

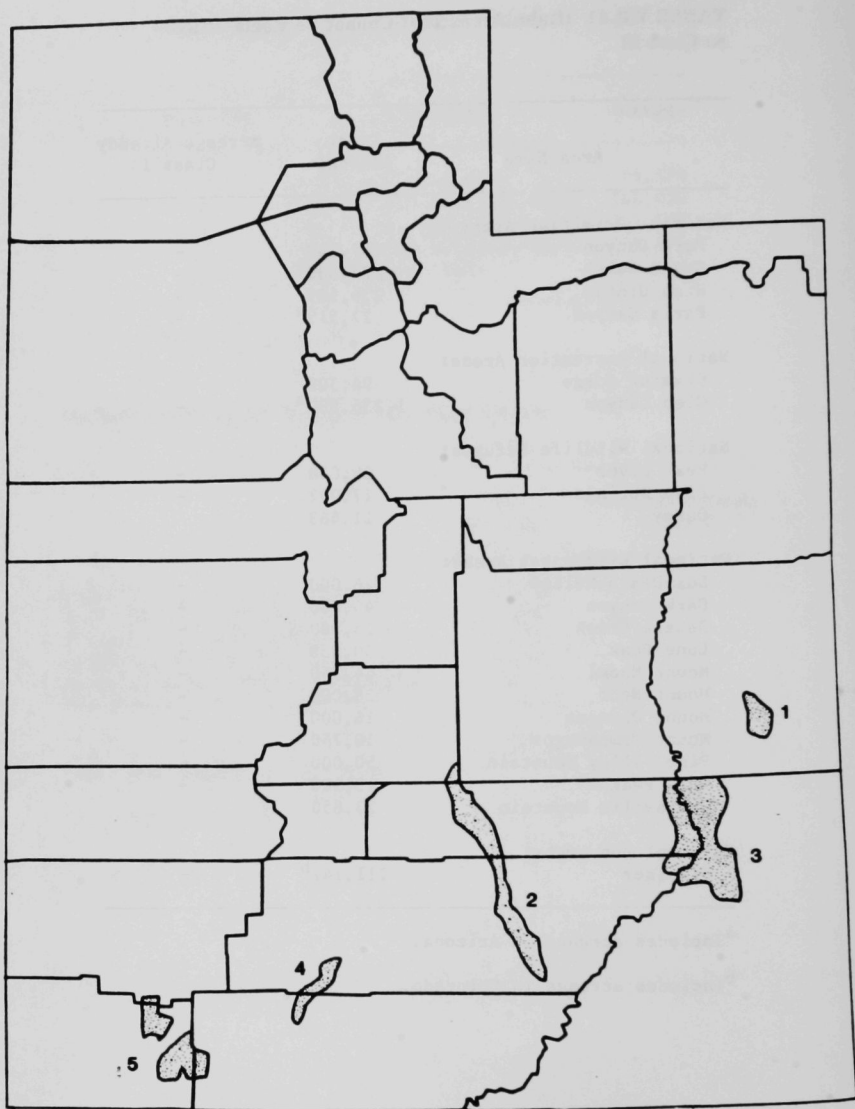


FIGURE VIII.20 Utah: PSD Class I Areas

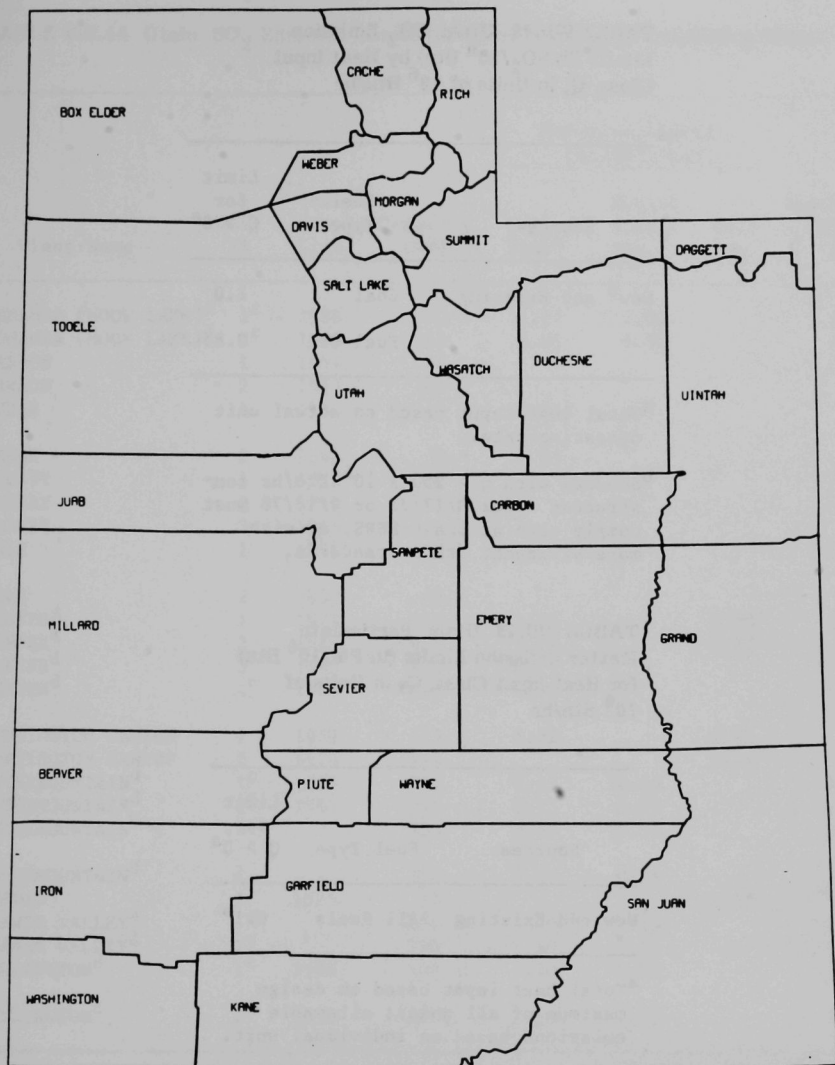


FIGURE VIII.21 Utah: Key to Counties

TABLE VIII.42 Utah: SO₂ Emission Limits (lb SO₂/10⁶ Btu) by Heat Input Class, Q, in Units of 10⁶ Btu/hr

Sources	Fuel Type	Limit for Q > 0 ^a
New ^b and Existing	Coal	1.0
	Fuel Oil	0.85

^aTotal heat input based on actual unit operating rate.

^bSources with Q > 250 x 10⁶ Btu/hr constructed after 8/17/71 or 9/18/78 must comply with at least NSPS, or with more stringent state standards.

TABLE VIII.43 Utah: Particulate Matter Emission Limits (lb PM/10⁶ Btu) for Heat Input Class, Q, in Units of 10⁶ Btu/hr

Sources	Fuel Type	Limit for Q > 0 ^a
New and Existing	All Fuels	0.1 ^b

^aTotal heat input based on design maximum of all units; allowable emissions based on individual unit.

^bEstablished on a case-by-case basis. Applicable new sources must comply with at least NSPS, or with more stringent state standards.

TABLE VIII.44 Utah: SO₂ Emission Limits for Electrical Utility Generating Plants

Plant Name	Unit ID	Year on Line	Capacity (MW)	Emission Limits (lb/10 ⁶ Btu)			Averaging Period (hr)
				Stated Coal ^a	Equiv. Annual Avg. ^b	Oil/Gas	
BONANZA (MOON LAKE) ^d	1 ^c	1988	400	0.05	0.05		720
BONANZA (MOON LAKE) ^d	2 ^c	1995	360	0.05	0.05		720
CARBON	1	1954	66				
CARBON	2	1957	105				
CEDAR	1	1945	8	2.00			
CEDAR	2	1945	8	2.00			
GADSBY	1	1951	66				
GADSBY	2	1952	75				
GADSBY	3	1955	105				
HALE	1	1936	18				
HALE	2	1950	45				
HUNTER ^d	1	1978	446	1.20		0.80	
HUNTER ^d	2	1980	400	1.20		0.80	
HUNTER ^d	3	1983	415	0.12			
HUNTER ^d	4 ^c	1985	410	0.12			
HUNTINGTON CANYON	1	1977	415	1.20		0.80	
HUNTINGTON CANYON	2	1974	415			1.70	
INTERMOUNTAIN ^d	1 ^c	1986	750	0.15	0.14		720
INTERMOUNTAIN ^d	2 ^c	1987	750	0.15	0.14		720
INTERMOUNTAIN ^d	3		750	0.15	0.14		720
INTERMOUNTAIN ^d	4		750	0.15	0.14		720
JORDAN	3	1925	24			1.70	
WARNER VALLEY ^d	1 ^c		250	1.20	1.13		720
WARNER VALLEY ^d	2 ^c		250	1.20	1.13		720
WELLINGTON ^d	1 ^c	1994	500	1.20	1.13		720
WELLINGTON ^d	2 ^c	1996	500	1.20	1.13		720

^aLimit as stated in regulations.^bEquivalent coal limit to account for variability of sulfur content.^cUnit not on line in 1984.^dNSPS unit.

TABLE VIII.45 Wyoming: Summary of Air-Quality Attainment

Air Quality Status	Pollutant				
	SO ₂ ^a	TSP ^{a,b}	CO	O ₃	NO _x
Attainment					
No. of Counties Containing NA Areas in 1981	0/0	1/0	0	0	0
No. of Counties Containing NA Areas in 1987	0/0	0/1	0	0	0
State Implementation Plan ^c	N/N	N/A	N	N	N
Improvement (1981 to 1987)					
No. of Counties that Changed from Primary NA to Secondary NA	0	1	d	d	d
No. of Counties that Changed from Secondary NA to Full Attainment	0	0	d	d	d
No. of Counties that Changed from Primary NA to Full Attainment	0	0	0	0	0
Total No. of Counties that Improved	0	1	0	0	0
Deterioration (1981 to 1987)					
No. of Counties that Changed from Secondary NA to Primary NA	0	0	d	d	d
No. of Counties that Changed from Full Attainment to Secondary NA	0	0	d	d	d
No. of Counties that Changed from Full Attainment to Primary NA	0	0	0	0	0
Total No. of Counties that Deteriorated	0	0	0	0	0

^aWhen two values given: Primary NA/Secondary NA.

^bTSP standard replaced by fine particulate standard (PM₁₀) on July 31, 1987. See Sec. 2 of the report summary for details on PM₁₀ and a full list of Group I and II areas. Wyoming: Group I counties = 1; Group II counties = 1.

^cA = Approved; C = Conditionally Approved; D = Disapproved; E = Extended Deadline; I = Incomplete; N = Not Required; R = Under Review; S = see SIP summary.

^dNo secondary standard exists for CO, O₃, or NO_x.

TABLE VIII.46 Wyoming: Comparison of 1981 and 1987 County Nonattainment Designations^a

County Code	County	SO ₂				TSP				CO		O ₃		NO _x	
		Prim		Sec		Prim		Sec		Prim		Prim		Prim	
		81	87	81	87	81	87	81	87	81	87	81	87	81	87
56037	SWEETWATER					P		P							

^ap = part of county, W = whole county.

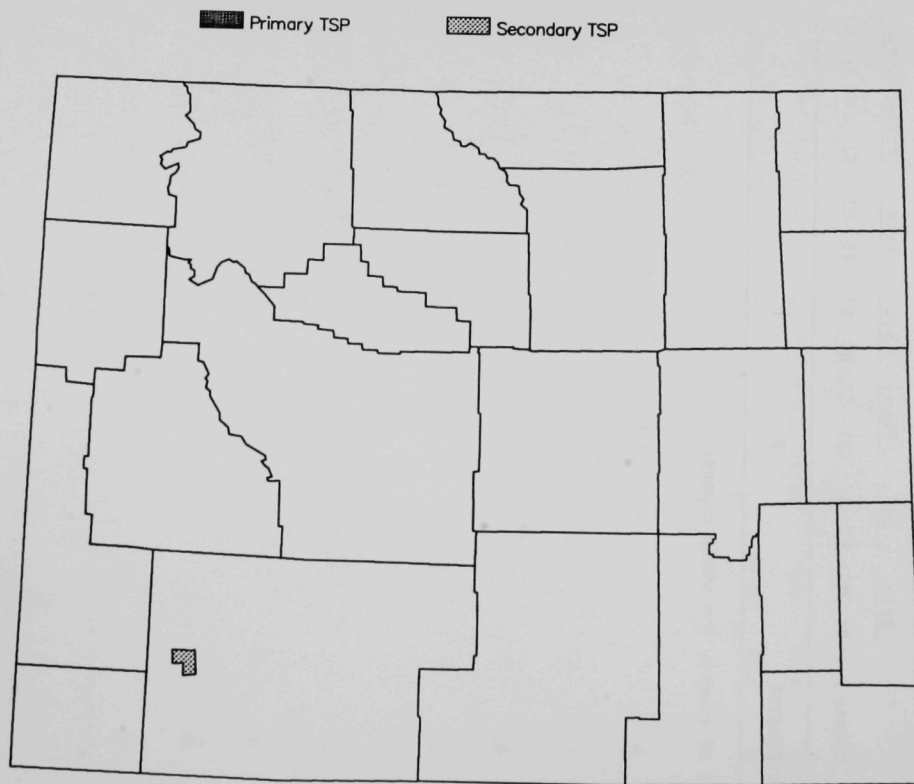


FIGURE VIII.22 Wyoming: TSP Nonattainment Areas as Designated in 1987

TABLE VIII.47 Wyoming: Synopsis of SIP Attainment Strategies for Areas Currently in Violation of NAAQS

Area ^a	NA ^b	Plan Date	EPA Action ^c	Source(s)	Strategy ^d
<u>TSP:</u>					
Sweetwater County	S	1/79	A	Trona plant	More stringent SIP emission limits

^aCities unless otherwise noted.

^bNonattainment violation indicated by pollutant and as P = primary and S = secondary.

^cA = Approved; C = Conditionally Approved; D = Disapproved; I = Incomplete; R = Under Review.

^dSee p. vii for a listing of the abbreviations.

TABLE VIII.48 Wyoming: PSD Class I Areas

Location ^a	Area Name	Acreage
1	Yellowstone National Park	2,020,625 ^b
2	North Absaroka Wilderness	351,104
3	Grand Teton National Park	310,521
4	Teton Wilderness	557,311
5	Washakie Wilderness	686,584
6	Bridger Wilderness	392,160
7	Fitzpatrick Wilderness	191,103

^aSee Fig. VIII.23.

^bYellowstone National Park, 2,219,785 acres overall, includes regions in Idaho and Montana.

TABLE VIII.49 Wyoming: Recommended Class I Areas

Area Name	Total Acreage	Acreage Already Class I
Devil's Tower National Monument	1,347	-
Fossil Butte National Monument	8,198	-
Scab Creek Primitive Area	6,680	-

**TABLE VIII.50 Wyoming: Areas That Cannot Be
Reclassified as Class III**

Area Name	Total Acreage	Acreage Already Class I
National Primitive Areas:		
Cloud Peak	136,905	-
Popo Agee	71,320	-
National Recreation Areas:		
Bighorn Canyon	120,296 ^a	-
Flaming Gorge	201,114 ^b	-
National Wildlife Refuges:		
National Elk Refuge	24,207	-
Pathfinder	16,807	-
Seedskadee	13,494	-
National Wilderness Areas:		
Absaroka-Beartooth	23,750	-
Cloud Peak	189,039	-
Encampment River	10,124	-
Gros Ventre	287,000	-
Huston Park	30,588	-
Jedediah Smith	123,451	-
Platte River	22,749	-
Popo Agie	101,870	-
Savage Run	14,940	-
Winegar Hole	10,708	-

^aIncludes acreage in Montana.

^bIncludes acreage in Utah.

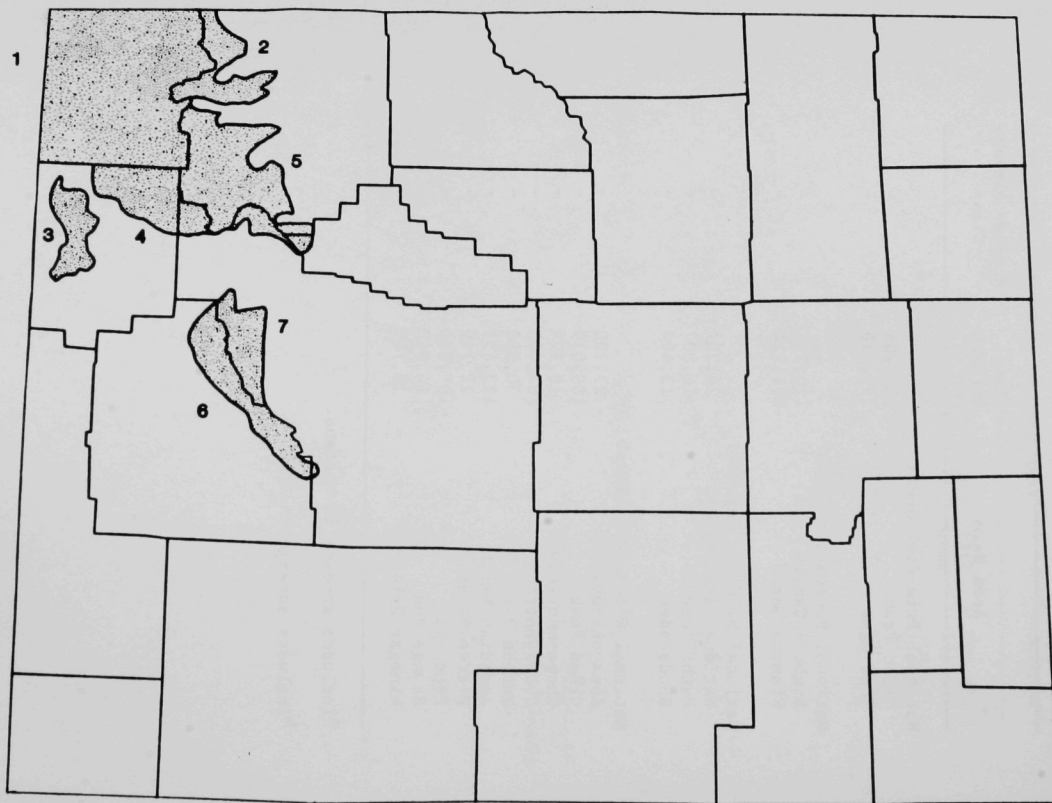


FIGURE VIII.23 Wyoming: PSD Class I Areas

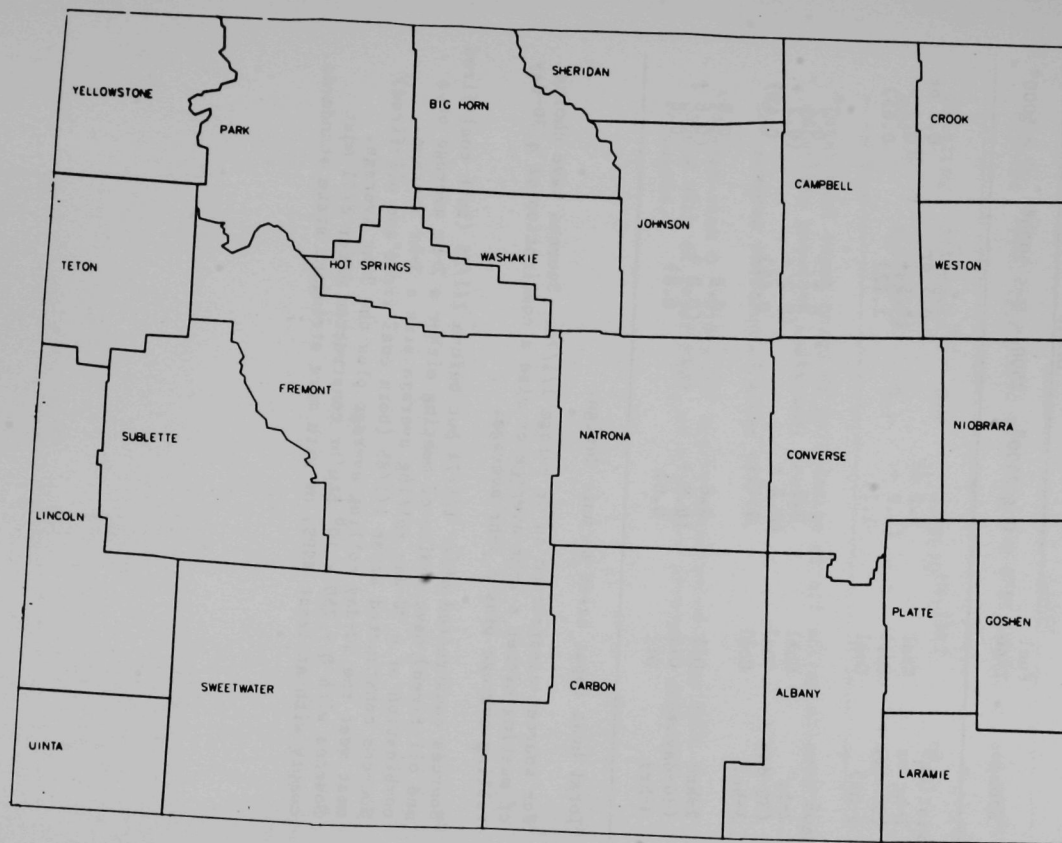


FIGURE VIII.24 Wyoming: Key to Counties

TABLE VIII.51 Wyoming: SO_2 Emission Limits ($\text{lb SO}_2/10^6 \text{ Btu}$) by Heat Input Class, Q , in Units of 10^6 Btu/hr

Sources	Fuel Type	Limit		
		250 < Q ≤ 2500 ^a	2500 < Q ≤ 5000 ^a	Q > 5000 ^a
Existing ^b				
2-hr or	Coal	1.2 or	0.5 or	0.3 or
(30-day +	Coal	(1.2 +	(0.5 +	(0.3 +
3-hr)	Coal	1.2)	1.12)	0.65)
New ^c				
2-hr	Coal	0.2	0.2	0.2
(30-day +	Coal	(0.2 +	(0.2 +	(0.2 +
3-hr)	Coal	0.45)	0.45)	0.45)
2-hr	Oil	0.8	0.8	0.8
(30-day +	Oil	(0.8 +	(0.8 +	(0.8 +
3-hr)	Oil	0.8)	0.8)	0.8

^aTotal heat input based on unit design.

^bFor sources constructed on or before 1/1/74. Sources have choice of meeting either a 2-hr average or else a combination of a 30-day rolling average plus a 3-hr average.

^cSources constructed after 1/1/74 but before 1/1/85 (both coal-fired and oil-fired) have choice of meeting either a 2-hr average or a combination of a 30-day rolling average plus a 3-hr average. Sources constructed after 1/1/85 (both coal-fired and oil-fired) must meet the 30-day rolling average plus the 3-hr average. Sources with $Q > 250 \times 10^6 \text{ Btu/hr}$ constructed after 8/71 must comply with at least NSPS, or with more stringent state standards.

**TABLE VIII.52 Wyoming: Particulate Matter Emission Limits
(lb PM/10⁶ Btu) for Heat Input Class, Q, in Units of 10⁶ Btu/hr**

Sources	Fuel Type	Limit		
		$Q \leq 10^a$	$10 < Q < 10,000^a$	$Q \geq 10,000^a$
Existing	All Fuels	0.6	$0.8963Q^{-0.1743}$	0.18
New ^{b,c}	All Fuels	0.1	0.1	0.1

^aTotal heat input based on unit design of all units; allowable emissions based on individual stack.

^bNew sources constructed after 4/9/73.

^cSources with $Q > 250 \times 10^6$ Btu/hr constructed after 8/71 must comply with at least NSPS, or with more stringent state standards.

TABLE VIII.53 Wyoming: SO₂ Emission Limits for Electrical Utility Generating Plants

Plant Name	Unit ID	Year on Line	Capacity (MW)	Emission Limits (lb/10 ⁶ Btu)			Averaging Period (hr)
				Stated Coal ^a	Equiv. Annual Avg. ^b	Oil/Gas	
BRIDGER, JIM	1	1974	500	0.30	0.24	0.30	2
BRIDGER, JIM	2	1975	500	0.30	0.24	0.30	2
BRIDGER, JIM	3	1976	500	0.30	0.24	0.30	2
BRIDGER, JIM ^d	4	1979	508	0.20	0.16	0.20	2
JOHNSTON, DAVE	1	1959	100	1.20	0.94	1.20	2
JOHNSTON, DAVE	2	1961	100	1.20	0.94	1.20	2
JOHNSTON, DAVE	3	1964	220	1.20	0.94	1.20	2
JOHNSTON, DAVE	4	1972	330	0.50	0.39	0.50	2
LARAMIE	1	1954	1				
LARAMIE RIVER ^d	1	1980	500	0.20			
LARAMIE RIVER ^d	2	1981	500	0.20			
LARAMIE RIVER ^d	3	1982	500	0.20			
NAUGHTON	1	1963	160	1.20	0.94	1.20	2
NAUGHTON	2	1968	220	1.20	0.94	1.20	2
NAUGHTON	3	1971	330	0.50	0.39	0.50	2
OSAGE	1	1948	10	1.20	0.94		2
OSAGE	2	1949	10	1.20	0.94		2
OSAGE	3	1952	10	1.20	0.94		2
OSAGE ^d	4 ^c	1989	100				720
SIMPSON	3	1946	1	1.20	0.94		2
SIMPSON	4	1948	2	1.20	0.94		2
SIMPSON	5	1969	18	1.20	0.94		2
SUNRISE WEST ^d	1 ^c	1990	500	0.20	0.19		720
SUNRISE WEST ^d	2		500	0.20			
TRONA	1 ^c	1968	16				
WYODAK ^d	1	1978	330	0.50	0.39	0.50	2
WYODAK ^d	2 ^c		310	0.20			
WYOMING COAL ^d	1 ^c	1989	470	0.20			

^aLimit as stated in regulations.

^bEquivalent coal limit to account for variability of sulfur content.

^cUnit not on line in 1984.

^dNSPS unit.

**APPENDIX IX,
FEDERAL REGION IX:**

**ARIZONA
CALIFORNIA
NEVADA**

TABLE IX.1 Arizona: Summary of Air-Quality Attainment

Air Quality Status	Pollutant				
	SO ₂ ^a	TSP ^{a,b}	CO	O ₃	NO _x
Attainment					
No. of Counties Containing NA Areas in 1981	5/0	7/2	5	5	0
No. of Counties Containing NA Areas in 1987	5/0	7/0	2	1	0
State Implementation Plan ^c	S/N	S/N	D	S	N
Improvement (1981 to 1987)					
No. of Counties that Changed from Primary NA to Secondary NA	0	0	d	d	d
No. of Counties that Changed from Secondary NA to Full Attainment	0	0	d	d	d
No. of Counties that Changed from Primary NA to Full Attainment	0	2	3	4	0
Total No. of Counties that Improved	0	2	3	4	0
Deterioration (1981 to 1987)					
No. of Counties that Changed from Secondary NA to Primary NA	0	2	d	d	d
No. of Counties that Changed from Full Attainment to Secondary NA	0	0	d	d	d
No. of Counties that Changed from Full Attainment to Primary NA	0	0	0	0	0
Total No. of Counties that Deteriorated	0	2	0	0	0

^aWhen two values given: Primary NA/Secondary NA.

^bTSP standard replaced by fine particulate standard (PM₁₀) on July 31, 1987. See Sec. 2 of the report summary for details on PM₁₀ and a full list of Group I and II areas. Arizona: Group I counties = 6; Group II counties = 8.

^cA = Approved; C = Conditionally Approved; D = Disapproved; E = Extended Deadline; I = Incomplete; N = Not Required; R = Under Review; S = see SIP summary.

^dNo secondary standard exists for CO, O₃, or NO_x.

TABLE IX.2 Arizona: Comparison of 1981 and 1987 County Nonattainment Designations^a

County Code	County	SO ₂				TSP				CO		O ₃		NO _x	
		Prim		Sec		Prim		Sec		Prim		Prim		Prim	
		81	87	81	87	81	87	81	87	81	87	81	87	81	87
4003	COCHISE	P	P			P	P			P		P			
4005	COCONINO					P									
4007	GILA	P	P			P	P								
4011	GREENLEE	P	P				P	P							
4013	MARICOPA					P	P			P	P	P	P		
4017	NAVAJO						P	P							
4019	PIMA	P	P			P	P			P	P	P			
4021	PINAL	P	P			P	P			P		P			
4023	SANTA CRUZ					P				P		P			

^aP = part of county, W = whole county.

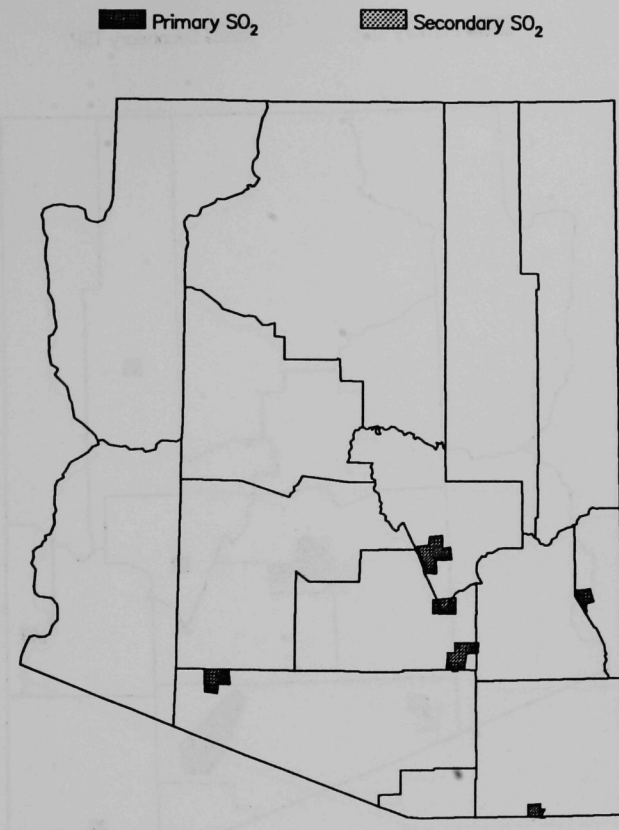


FIGURE IX.1 Arizona: SO₂ Nonattainment Areas as Designated in 1987

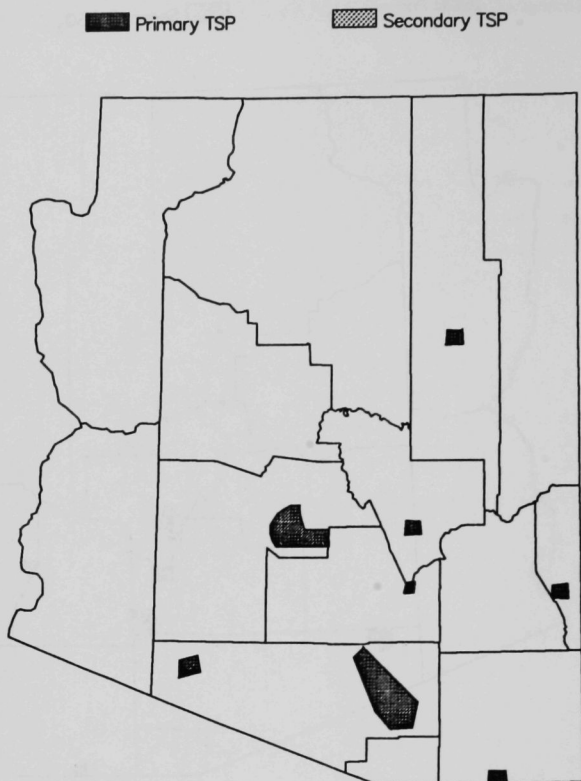


FIGURE IX.2 Arizona: TSP Nonattainment Areas as Designated in 1987

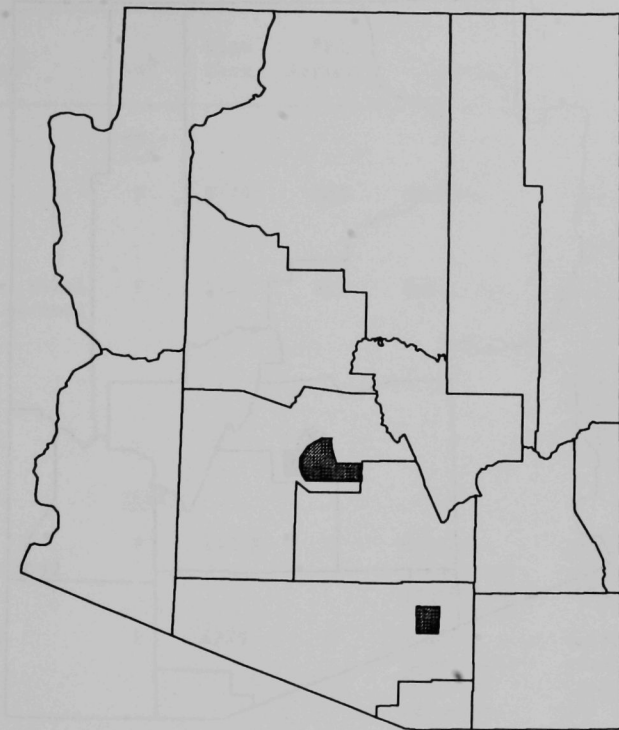


FIGURE IX.3 Arizona: CO Nonattainment Areas as Designated in 1987

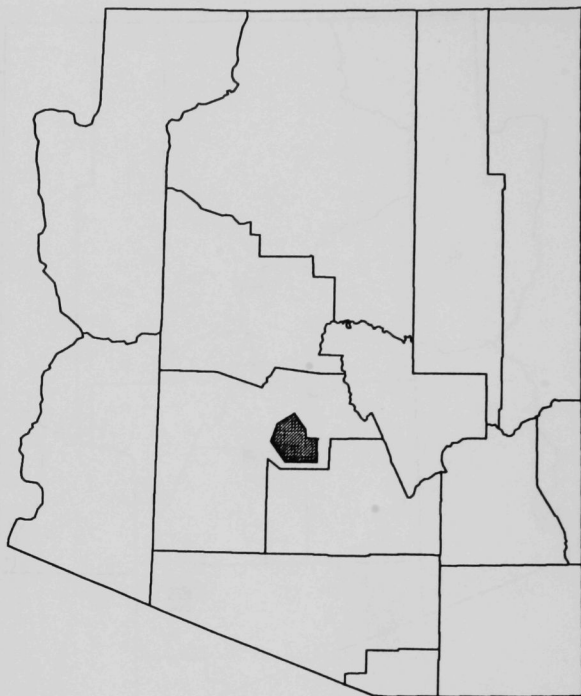


FIGURE IX.4 Arizona: O₃ Nonattainment Areas as Designated in 1987

TABLE IX.3 Arizona: Synopsis of SIP Attainment Strategies for Areas Currently in Violation of NAAQS

Area ^a	NA ^b	Plan Date	EPA Action ^c	Source(s)	Strategy ^d
<u>SO₂:</u>					
Hayden	P	9/79	NFR	Smelter	GEP stack height and multi-point rollback
Ajo, Douglas, Miami, San Manuel, Morenci	P	9/80	NFR	Smelters	Use multi-point rollback approach to allow for variations in smelter production level; NSO initiated 1/80; develop fugitive controls
<u>TSP:</u>					
Phoenix (Maricopa County)	P	11/79	C	Mobile, urban non-traditional	Paving, curbing, and street cleaning
Tucson (Pima County)	P	4/79	C	Mobile, industrial fugitive emissions	Paving and curbing; develop control measures for industrial sources
Ajo, Douglas, Hayden, Miami, Morenci	P	NS	None	Smelters, industrial fugitives	Develop fugitive controls
Paul Spur and Joseph City	P	NS	None	Lime plant/power plant	Develop fugitive controls
<u>CO:</u>					
Maricopa County	P	10/82	D	Mobile	FMVECP; TCM; I&M; attainment by 1987
Pima County	P	2/84	D	Mobile	FMVECP; TCM; I&M; attainment AEAP

TABLE IX.3 Arizona (Cont'd)

Area ^a	NA ^b	Plan Date	EPA Action ^c	Source(s)	Strategy ^d
<u>O₃:</u>					
Maricopa County	P	8/79	SC	Mobile	RACT on VOC sources; FMVECP; I&M; TCM; attain- ment by 1987

^aCities unless otherwise noted.

^bNonattainment violation indicated by pollutant and as P = primary and S = secondary.

^cA = Approved; C = Conditionally Approved; D = Disapproved; I = Incomplete; R = Under Review; SC = SIP Call; NFA = Not Fully Approved, NS = Not Submitted.

^dSee p. vii for a listing of the abbreviations.

TABLE IX.4 Arizona: PSD Class I Areas

Location ^a	Area Name	Acreage
1	Grand Canyon National Park	1,218,375
2	Sycamore Canyon Wilderness	47,757
3	Petrified Forest National Park	93,533
4	Pine Mountain Wilderness	20,061
5	Mazatzal Wilderness	205,137
6	Sierra Ancha Wilderness	20,850
7	Mount Baldy Wilderness	6,975
8	Superstition Wilderness	124,117
9	Galiuro Wilderness	52,717
10	Saguaro Wilderness	71,400
11	Chiricahua National Monument Wilderness	9,440
12	Chiricahua Wilderness	18,000

^aSee Fig. IX.5.

TABLE IX.5 Arizona: Recommended Class I Areas

Area Name	Total Acreage	Acreage Already Class I
Canyon de Chelly National Monument	83,840	-
Chiricahua National Monument	11,985	9,440
Organ Pipe Cactus National Monument	330,688	-
Paiute National Wilderness	35,092	-
Paria Canyon National Wilderness	27,515 ^a	-
Saguaro National Monument	83,574	71,400
Sunset Crater National Monument	3,040	-
Wupatki National Monument	35,253	-

^aIncludes acreage in Utah.

TABLE IX.6 Arizona: Areas That Cannot Be Reclassified as Class III

Area Name	Acreage	Acreage Already Class I
National Monuments:		
Canyon de Chelly	83,840	-
Chiricahua	11,985	9,440
Organ Pipe Cactus	330,689	-
Saguaro	83,574	71,400
Wupatki	35,253	-
National Primitive Areas:		
Blue Range	175,112	-
Paiute	35,092	-
National Recreation Areas:		
Glen Canyon	1,236,880 ^a	-
Lake Mead	1,495,666 ^b	-
National Wildlife Refuges:		
Cabeza Prieta	860,000	-
Havasut	43,070 ^c	-
Imperial	25,746 ^c	-
Kofa	660,000	-
National Wilderness Areas:		
Bear Wallow	11,080	-
Castle Creek	26,030	-
Cedar Bench	14,950	-
Fossil Springs	11,550	-
Four Peaks	60,743	-
Hellsgate	36,780	-
Kachina Peaks	18,200	-
Kanab Creek	68,250	-
Miller Peak	20,190	-
Mount Wrightson	25,260	-
Munds Mountain	18,150	-
Pusch Ridge	61,075	-
Red Rock-Secret Mountain	43,950	-
Rincon Mountain	38,590	-
Saddle Mountain	40,600	-
Salome	18,950	-
Salt River Canyon	32,800	-
Santa Teresa	26,780	-
Sierra Ancha	20,850	-
Strawberry Crater	10,140	-
West Clear Creek	13,600	-

^aIncludes acreage in Utah.

^bIncludes acreage in Nevada.*

^cIncludes acreage in California.

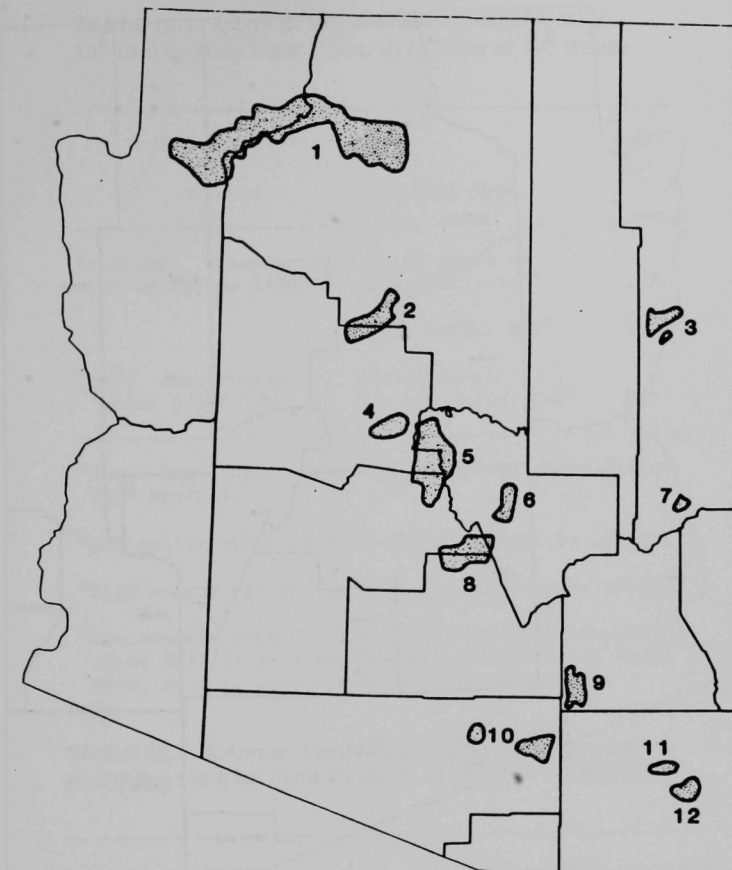


FIGURE IX.5 Arizona: PSD Class I Areas



FIGURE IX.6 Arizona: Key to Counties

TABLE IX.7 Arizona: SO₂ Emission Limits (lb SO₂/10⁶ Btu) by Heat Input Class, Q, in Units of 10⁶ Btu/hr

Sources	Fuel Type	Limit for Q > 0 ^a
Existing: constructed on or before 5/30/72	Solid Fuels or Low Sulfur Oil ^b	1.0
	High Sulfur Oil ^c	2.2
New ^d : constructed after 5/30/72	Solid Fuels or Low Sulfur Oil ^b	0.8

^aTotal heat input based on total plant rated design (10⁶ Btu/hr).

^bLow sulfur oil is < 0.9% sulfur content by weight.

^cHigh sulfur oil is > 0.9% sulfur content by weight.

^dNew sources with Q > 250 x 10⁶ Btu/hr constructed after 8/17/71 or 9/18/78 must comply with at least NSPS, or with more stringent state standards.

TABLE IX.8 Arizona: Particulate Matter Emission Limits (lb PM/hr) for Heat Input Class, Q, in Units of 10⁶ Btu/hr

Sources	Fuel Type	Limit	
		Q ≤ 4,200 ^a	Q > 4,200 ^a
New ^b and Existing			
Statewide	All Fuels	1.02Q ^{0.769}	17.0Q ^{0.432}

^aTotal heat input based on aggregate of all fuels burned (by individual stack); allowable emissions based on individual stack.

^bSources with Q > 250 x 10⁶ Btu/hr must comply with at least NSPS, or with more stringent state standards.

TABLE IX.9 Arizona: SO₂ Emission Limits for Electrical Utility Generating Plants

Plant Name	Unit ID	Year on Line	Capacity (MW)	Emission Limits (lb/10 ⁶ Btu)			Averaging Period (hr)
				Stated Coal ^a	Equiv. Annual Avg. ^b	Oil/Gas	
AGUA FRIA	1	1958	113			1.00	3
AGUA FRIA	2	1957	113			1.00	3
AGUA FRIA	3	1961	182			1.00	3
APACHE STATION	1	1964	71				
APACHE STATION ^d	2	1979	167	0.80	0.63		3
APACHE STATION ^d	3	1979	175	0.80	0.63		3
CHOLLA	1	1962	116	1.00	0.79		3
CHOLLA ^d	2	1978	235	0.80	0.63		3
CHOLLA ^d	3	1978	250	0.80			
CHOLLA ^d	4	1981	350	0.80			
CHOLLA ^d	5 ^c	1990	350	0.80			
CORONADO ^d	1	1979	350	0.80	0.63	0.80	3
CORONADO ^d	2	1980	350	0.80			
CORONADO ^d	3 ^c	1991	350	0.80			
CROSSCUT	1	1942	9			1.00	
CROSSCUT	2	1942	9			1.00	
CROSSCUT	3	1942	9			1.00	
CROSSCUT	4	1949	9			1.00	
DEMOSS PETRIE	1	1949	15			1.00	
DEMOSS PETRIE	2	1949	13			1.00	
DEMOSS PETRIE	3	1953	24			1.00	
DEMOSS PETRIE	4	1954	46			1.00	
IRVINGTON	1	1958	81	1.00		1.00	
IRVINGTON	2	1960	81	1.00		1.00	
IRVINGTON	3	1962	104	1.00		1.00	
IRVINGTON	4	1967	156	1.00		1.00	
KYRENE	1	1952	35			1.00	3
KYRENE	2	1954	75			1.00	3
NAVAJO	1	1974	750	1.00	0.79	1.00	3
NAVAJO	2	1975	750	1.00	0.79	1.00	3
NAVAJO	3	1976	750	1.00	0.79	1.00	3
OCOTILLO	1	1960	115			1.00	3
OCOTILLO	2	1960	113			1.00	3
PHOENIX	4	1948	33			1.00	3
PHOENIX	5	1949	13			1.00	3

TABLE IX.9 Arizona (Cont'd)

Plant Name	Unit ID	Year on Line	Capacity (MW)	Emission Limits (lb/10 ⁶ Btu)		Oil/ Gas	Averaging Period (hr)
				Stated Coal ^a	Equiv. Annual Avg. ^b		
PHOENIX	6	1950	67			1.00	3
SAGUARO	1	1954	110			1.00	3
SAGUARO	2	1955	94			1.00	3
SPRINGERVILLE ^d	1 ^c	1985	350	0.69			
SPRINGERVILLE ^d	2 ^c	1987	350	0.69			
SPRINGERVILLE ^d	3		350	0.69	0.65		720
UNKNOWN	1 ^c	1990	360	0.80	0.75		720
UNKNOWN	2 ^c	1994	360	0.80	0.75		720
YUMA AXIS	1	1959	75			1.00	3

^aLimit as stated in regulations.

^bEquivalent coal limit to account for variability of sulfur content.

^cUnit not on line in 1984.

^dNSPS unit.

TABLE IX.10 California: Summary of Air-Quality Attainment

Air Quality Status	Pollutant				
	SO ₂ ^a	TSP ^{a,b}	CO	O ₃	NO _x
Attainment					
No. of Counties Containing NA Areas in 1981	1/0	16/4	22	34	4
No. of Counties Containing NA Areas in 1987	0/0	15/2	22	34	4
State Implementation Plan ^c	N/N	S/S	S	S	C
Improvement (1981 to 1987)					
No. of Counties that Changed from Primary NA to Secondary NA	0	0	d	d	d
No. of Counties that Changed from Secondary NA to Full Attainment	0	2	d	d	d
No. of Counties that Changed from Primary NA to Full Attainment	1	1	0	0	0
Total No. of Counties that Improved	1	3	0	0	0
Deterioration (1981 to 1987)					
No. of Counties that Changed from Secondary NA to Primary NA	0	0	d	d	d
No. of Counties that Changed from Full Attainment to Secondary NA	0	0	d	d	d
No. of Counties that Changed from Full Attainment to Primary NA	0	0	0	0	0
Total No. of Counties that Deteriorated	0	0	0	0	0

^aWhen two values given: Primary NA/Secondary NA.

^bTSP standard replaced by fine particulate standard (PM₁₀) on July 31, 1987. See Sec. 2 of the report summary for details on PM₁₀ and a full list of Group I and II areas. California: Group I counties = 11; Group II counties = 5.

^cA = Approved; C = Conditionally Approved; D = Disapproved; E = Extended Deadline; I = Incomplete; N = Not Required; R = Under Review; S = see SIP summary.

^dNo secondary standard exists for CO, O₃, or NO_x.

TABLE IX.11 California: Comparison of 1981 and 1987 County Nonattainment Designations^a

County Code	County	SO ₂				TSP				CO		O ₃		NO _x	
		Prim		Sec		Prim		Sec		Prim		Prim		Prim	
		81	87	81	87	81	87	81	87	81	87	81	87	81	87
6001	ALAMEDA							W		W	P	W	W		
6007	BUTTE									W	P	W	W		
6013	CONTRA COSTA									W	P	W	W		
6017	EL DORADO									P	P	W	P		
6019	FRESNO					W	W			P	P	W	W		
6025	IMPERIAL											W	W		
6029	KERN	P				P	P			P	P	P	P		
6031	KINGS					W	W					W	W		
6037	LOS ANGELES					W	P			P	P	W	W	P	P
6039	MADERA					W	W					W	W		
6041	MARIN									W	P	W	W		
6045	MENDOCINO					W									
6047	MERCED					W	W					W	W		
6053	MONTEREY											W	W		
6055	NAPA									W	P	W	W		
6059	ORANGE					W	W			W	W	W	W	W	W
6061	PLACER									P	P	W	P		
6065	RIVERSIDE					P	P			P	P	P	W	P	P
6067	SACRAMENTO							W	W	W	P	W	P		
6069	SAN BENITO											W	W		
6071	SAN BERNARDINO					P	P			P	P	P	W	P	P
6073	SAN DIEGO					P	P			P	P	P	W		
6075	SAN FRANCISCO									W	W	W	W		
6077	SAN JOAQUIN					W	W			W	P	W	W		
6079	SAN LUIS OBISPO							P							
6081	SAN MATEO									W	P	W	W		
6083	SANTA BARBARA					P	P					W	P		
6085	SANTA CLARA							W	W	W	P	W	W		
6087	SANTA CRUZ											W	W		
6095	SOLANO									P	P	P	W		
6097	SONOMA									P	P	P	P		
6099	STANISLAUS					W	W			W	P	W	W		
6101	SUTTER											W	W		
6107	TULARE					W	W					W	W		
6111	VENTURA					P	P					W	P		
6115	YUBA											W	W		

^ap = part of county, W = whole county.



FIGURE IX.7 California: TSP Nonattainment Areas as Designated in 1987

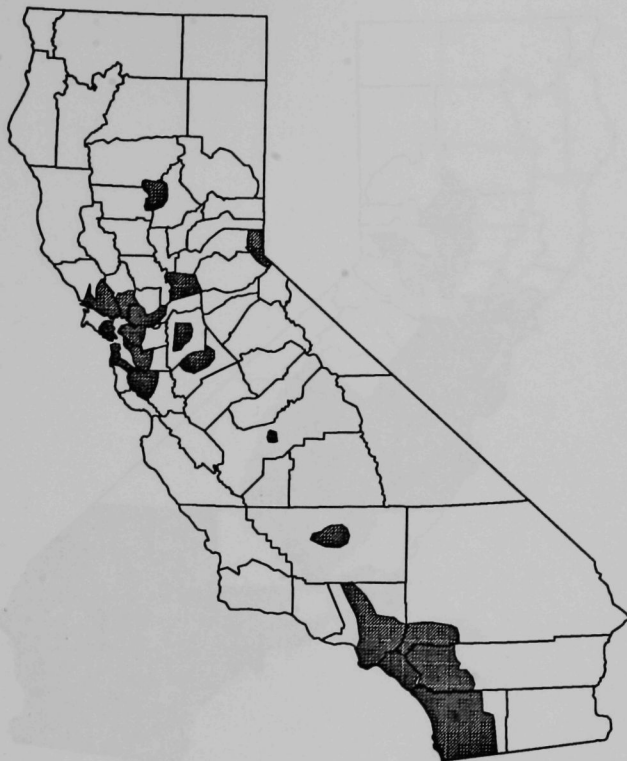


FIGURE IX.8 California: CO Nonattainment Areas as Designated in 1987



FIGURE IX.9 California: O₃ Nonattainment Areas as Designated in 1987

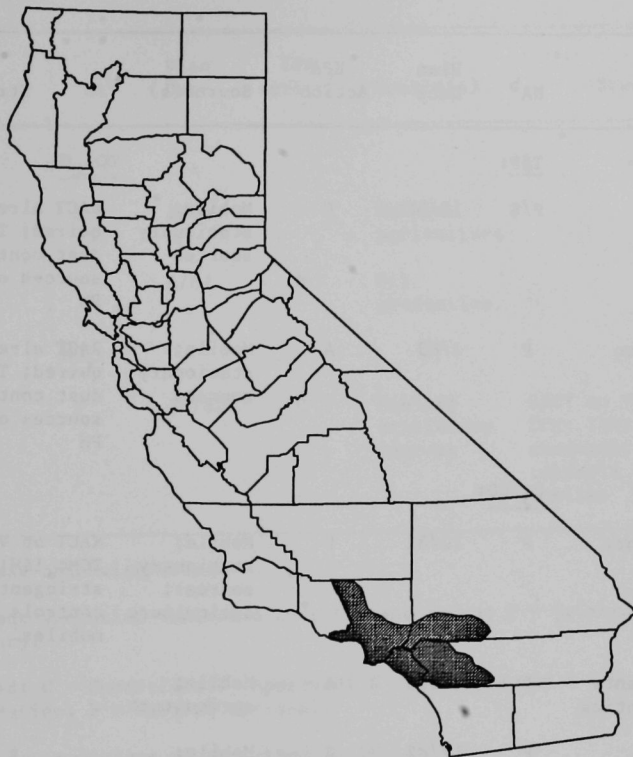


FIGURE IX.10 California: NO_x Nonattainment Areas as Designated in 1987

TABLE IX.12 California: Synopsis of SIP Attainment Strategies for Areas Currently in Violation of NAAQS

Area ^a	NA ^b	Plan Date	EPA Action ^c	Source(s)	Strategy ^d
<u>TSP:</u>					
South Coast Air Basin	P/S	12/82	C	Mobile; stationary sources	RACT already required; TCM; fugitive dust control; control sources of secondary PM
San Francisco Bay Area	P	2/83	A	Mobile; stationary sources	RACT already required; TCM; fugitive dust control; control sources of secondary PM
<u>O₃/CO:</u>					
Ventura County	P	12/82	P	Mobile; stationary sources; agriculture	RACT on VOC sources; TCM; I&M; most stringent emission controls on automobiles
Monterey, Santa Barbara counties	P	12/82	A	Mobile; agriculture	
South Coast Air Basin	P	12/82	C	Mobile; stationary source	
Fresno County	P	12/82	P	Mobile; agriculture	
San Joaquin, Stanislaus counties	P	12/82	A	Mobile; agriculture	
San Francisco Bay Area	P	2/83	A	Mobile; stationary source	
San Diego County	P	2/83	A	Mobile; stationary source	

TABLE IX.12 California (Cont'd)

Area ^a	NA ^b	Plan Date	EPA Action ^c	Source(s)	Strategy ^d
	<u>O₃/CO</u>				
Sacramento County	P	1/84	P	Mobile; agriculture	
Kern County	P	4/87	D	Oil production	
	<u>NO_x</u>				
South Coast Air Basin	P	12/82	C	Mobile; stationary sources	RACT on VOC sources; TCM; I&M; most stringent emission controls on automobiles

^aCities unless otherwise noted.

^bNonattainment violation indicated by pollutant and as P = primary and S = secondary.

^cA = Approved; C = Conditionally Approved; D = Disapproved; I = Incomplete; R = Under Review; P = Partial Approval.

^dSee p. vii for a listing of the abbreviations.

TABLE IX.13 California: PSD Class I Areas

Location ^a	Area Name	Acreage
1	Redwood National Park	110,178
2	Marble Mountain Wilderness	213,743
3	Lava Beds Wilderness	28,460
4	South Warner Wilderness	68,507
5	Thousand Lakes Wilderness	15,695
6	{ Lassen Volcanic National Park	105,800
	{ Caribou Wilderness	19,080
7	Yolla-Bolly-Middle-Eel Wilderness	109,091
8	Desolations Wilderness	63,469
9	Mokelumme Wilderness	50,400
10	Emigrant Wilderness	104,311
11	Hoover Wilderness	47,916
12	Yosemite National Park	761,170
13	Minarets	102,040
14	John Muir Wilderness	484,673
15	Kaiser Wilderness	22,500
16	Kings Canyon National Park	461,901
17	Sequoia National Park	402,482
18	Point Reyes Wilderness	25,370
19	Pinnacles Wilderness	12,952
20	Ventana Wilderness	95,152
21	Dome Land Wilderness	62,206
22	San Rafael Wilderness	142,722
23	San Gabriel Wilderness	36,137
24	Cucamonga Wilderness	9,022
25	San Geronio Wilderness	34,644
26	Joshua Tree Wilderness	429,690
27	San Jacinto Wilderness	20,564
28	Aqua Tibia Wilderness	15,934

^aSee Fig. IX.11.

TABLE IX.14 California: Recommended Class I Areas

Area Name	Acreage	Acreage Already Class I
Channel Islands National Park	249,354	-
Chemise Mountain Primitive Area	3,941	-
Death Valley National Monument	2,067,628 ^a	-
Joshua Tree National Monument	559,955	429,690
Lava Beds National Monument	46,560	28,460
Muir Woods National Monument	554	-
Pinnacles National Monument	16,265	12,952
Redwood National Park	110,178	-
Sequoia National Park	402,482	386,642

^aIncludes acreage in Nevada.

TABLE IX.15 California: Areas That Cannot Be Reclassified as Class III

Area Name	Total Acreage	Acreage Already Class I
National Monuments:		
Death Valley	2,067,628 ^a	-
Joshua Tree	559,955	429,690
Lava Beds	46,560	28,460
Pinnacles	16,265	12,952
National Primitive Areas:		
High Sierra	11,952	-
Shasta-Trinity Alps	283,783	-
National Recreation Areas:		
Golden Gate	73,117	-
Santa Monica Mountains	150,000	-
Whiskeytown-Shasta-Trinity	254,487	-
National Wild and Scenic Rivers:		
American River, North Fork	13,400	-
Feather River, Middle Fork	13,108	-

TABLE IX.15 California (Cont'd)

Area Name	Total Acreage	Acreage Already Class I
National Wildlife Refuges:		
Clear Lake	33,400	-
Kern	10,618	-
Lower Klamath	21,459 ^b	-
Sacramento	10,783	-
Salton Sea	32,927	-
San Francisco Bay	16,157	-
Tule Lake	39,396	-
National Seashores:		
Point Reyes	71,046	25,370
National Parks:		
Channel Islands	249,354	-
Redwood	48,000	27,792
Sequoia	16,200	386,642
National Wilderness Areas:		
Ansel Adams	230,258	-
Bucks Lake	21,000	-
Carson-Iceberg	94,933	-
Cucamonga	12,981	-
Dick Smith	67,800	-
Dinkey Lakes	30,000	-
Golden Trout	305,484	-
Granite Chief	18,900	-
Ishi	41,600	-
Jennie Lakes	10,500	-
Machesna Mountain	19,760	-
Monarch	45,000	-
Mount Shasta	33,845	-
Pine Creek	13,100	-
Red Buttes	16,150	-
Russian Peak	12,000	-
San Mateo Canyon	39,540	-
Santa Lucia	18,679	-
Santa Rosa	14,028	-
Sheep Mountain	43,600	-
Siskiyou	152,680	-
Snow Mountain	36,370	-
South Sierra	60,108	-
Trinity Alps	497,981	-
Ventana	65,235	95,152

^aIncludes acreage in Nevada.^bIncludes acreage in Oregon.

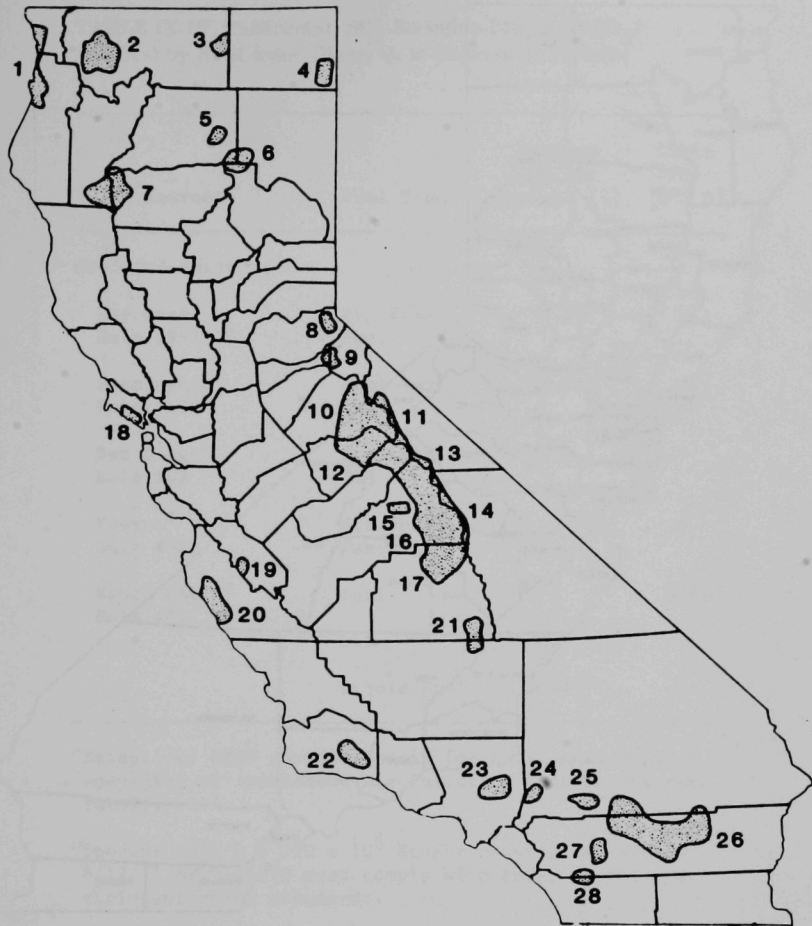


FIGURE IX.11 California: PSD Class I Areas

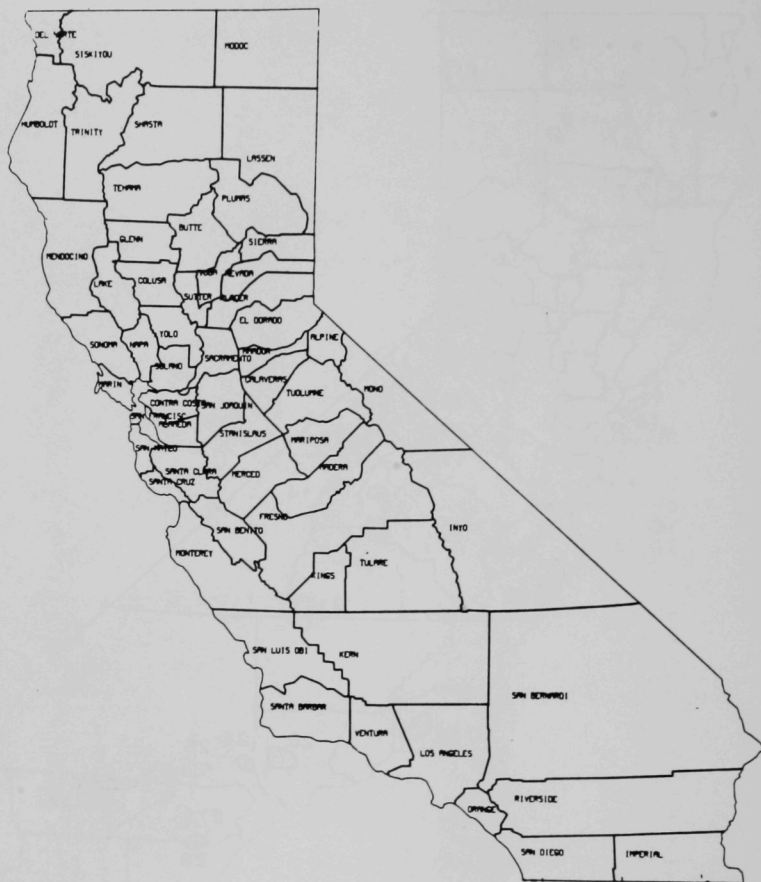


FIGURE IX.12 California: Key to Counties

TABLE IX.16 California: SO₂ Emission Limits (lb SO₂/10⁶ Btu) by Heat Input Class, Q, in Units of 10⁶ Btu/hr

Sources	Fuel Type	Maximum Sulfur Content (%)	Limit for Q > 0 ^a
New ^b and Existing			
Bay Area ^c Rule #9-1-304	All Fossil Fuels	0.5	d
Sacramento ^c Rule #420	Coal and Oil	0.5	-
San Diego ^c Rule #62	Coal and Oil	0.5	-
Fresno ^c Rule #408	All Fossil Fuels	-	e
South Coast ^c Rule #431.2, 431.3	Coal	-	0.56
	Oil	0.5	-
	Liquid Fuel	0.25 ^f	-

^aExcept for NSPS sources, basis for total heat input specified by applicable Air Pollution Control District (APCD).

^bSources with Q > 250 x 10⁶ Btu/hr constructed after 8/17/71 or 9/18/78 must comply with NSPS, or with more stringent state standards.

^cThere are 42 Air Pollution Control Districts (APCD) in California and each applicable district's regulations should be consulted to determine specific test methods, averaging times, and reporting requirements. Emission limitations are expressed for individual counties in each district. Typical APCD regulations limit SO₂ emissions and fuel sulfur contents to 200 lb/hr and 0.5% sulfur by weight, respectively. The districts specifically mentioned are examples.

^dEmission limit equivalent to 300 ppm.

^eEmission limit equivalent to 200 lb SO₂/hr.

^fApplies to steam generators at electric power plants.

TABLE IX.17 California: Particulate Matter Emission Limits (grains/dscf) for Heat Input Class, Q, in Units of 10^6 Btu/hr

Sources ^a	Fuel Type	Limit ^b
New ^c and Existing		
South Coast Air Quality Management District: Orange, Riverside, and San Bernardino counties	All Fuels	0.01 ^d
San Diego and Sacramento counties	All Fuels	0.1
Fresno County	All Fuels	0.1
Bay Area: Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, and parts of Sonoma and Solano counties	All Fuels	0.15

^aPM emission limitations are set at the county or Air Quality Management District level. Only sample counties are listed here.

^bAllowable emissions based on individual stack.

^cApplicable sources must comply with at least NSPS, or with more stringent state standards.

^dApplicable to sources $> 50 \times 10^6$ Btu/hr or > 10 MW electricity generating capacity.

TABLE IX.18 California: SO₂ Emission Limits for Electrical Utility Generating Plants

Plant Name	Unit ID	Year on Line	Capacity (MW)	Emission Limits (lb/10 ⁶ Btu)		Oil/ Gas	Averaging Period (hr)
				Stated Coal ^a	Equiv. Annual Avg. ^b		
ALAMITOS	1	1956	175			0.28	
ALAMITOS	2	1957	175			0.28	
ALAMITOS	3	1961	320			0.28	
ALAMITOS	4	1962	320			0.28	
ALAMITOS	5	1966	480			0.28	
ALAMITOS	6	1966	480			0.28	
AVON STEAM	1	1940	46			0.55	
BROADWAY	B1	1954	45			0.28	
BROADWAY	B2	1957	45			0.28	
BROADWAY	B3	1965	71			0.28	
CONTRA COSTA	1	1951	116			0.55	
CONTRA COSTA	2	1951	116			0.55	
CONTRA COSTA	3	1951	116			0.55	
CONTRA COSTA	4	1953	117			0.55	
CONTRA COSTA	5	1953	115			0.55	
CONTRA COSTA	6	1964	340			0.55	
CONTRA COSTA	7	1964	340			0.55	
COOL WATER	1	1961	65			0.55	
COOL WATER	2	1964	81			0.55	
EL CENTRO	1	1949	22			0.55	
EL CENTRO	2	1952	30			0.55	
EL CENTRO	3	1957	48			0.55	
EL CENTRO	4	1968	80			0.55	
EL SEGUNDO	1	1955	175			0.28	
EL SEGUNDO	2	1956	175			0.28	
EL SEGUNDO	3	1964	335			0.28	
EL SEGUNDO	4	1965	335			0.28	
ENCINA	1	1954	100			0.55	
ENCINA	2	1956	102			0.55	
ENCINA	3	1958	102			0.55	
ENCINA	4	1973	287			0.55	
ENCINA	5	1978	292			0.55	
ETIWANDA	1	1953	132			0.28	
ETIWANDA	2	1953	132			0.28	
ETIWANDA	3	1963	320			0.28	

TABLE IX.18 California (Cont'd)

Plant Name	Unit ID	Year on Line	Capacity (MW)	Emission Limits (lb/10 ⁶ Btu)			Averaging Period (hr)
				Stated Coal ^a	Equiv. Annual Avg. ^b	Oil/Gas	
ETIWANDA	4	1963	320			0.28	
GLENARM	G8	1932	14			0.28	
GLENARM	G9	1949	45			0.28	
GRAYSON	1	1977	20			0.28	
GRAYSON	2	1977	22			0.28	
GRAYSON	3	1953	21			0.28	
GRAYSON	4	1959	47			0.28	
GRAYSON	5	1964	49			0.28	
HARBOR	1	1944	78			0.28	36
HARBOR	2	1948	79			0.28	36
HARBOR	3	1949	92			0.28	36
HARBOR	4	1949	92			0.28	36
HARBOR	5	1949	94			0.28	36
HAYNES	1	1962	222			0.28	
HAYNES	2	1963	232			0.28	
HAYNES	3	1964	220			0.28	
HAYNES	4	1965	227			0.28	
HAYNES	5	1966	344			0.28	
HAYNES	6	1967	344			0.28	
HIGHGROVE	1	1952	32			0.28	
HIGHGROVE	2	1952	33			0.28	
HIGHGROVE	3	1953	44			0.28	
HIGHGROVE	4	1955	45			0.28	
HUMBOLT BAY	1	1956	52			1.50	
HUMBOLT BAY	2	1958	53			1.50	
HUNTERS POINT	2	1948	107			0.55	
HUNTERS POINT	3	1949	107			0.55	
HUNTERS POINT	4	1958	163			0.55	
HUNTINGTON BEACH	1	1958	215			0.28	
HUNTINGTON BEACH	2	1958	215			0.28	
HUNTINGTON BEACH	3	1961	215			0.28	
HUNTINGTON BEACH	4	1961	225			0.28	
IVANPAH ^d	1 ^c	1991	500	0.12	0.11		720
IVANPAH ^d	2 ^c	1992	500	0.12	0.11		720
IVANPAH ^d	3 ^c	1993	500	0.12	0.11		720

TABLE IX.18 California (Cont'd)

Plant Name	Unit ID	Year on Line	Capacity (MW)	Emission Limits (lb/10 ⁶ Btu)			Averaging Period (hr)
				Stated Coal ^a	Equiv. Annual Avg. ^b	Oil/Gas	
KERN	1	1948	74			3.50	
KERN	2	1950	106			3.50	
LONG BEACH	10	1928	50			0.28	
LONG BEACH	11	1930	50			0.28	
MAGNOLIA	1	1941	10			0.28	
MAGNOLIA	2	1943	10			0.28	
MAGNOLIA	3	1949	21			0.28	
MAGNOLIA	4	1953	28			0.28	
MANDALAY	1	1959	215			0.55	
MANDALAY	2	1959	215			0.55	
MARTINEZ	1	1941	46			0.55	
MONTEZUMA	1		800	0.12	0.11		720
MONTEZUMA	2		800	0.12	0.11		720
MORRO BAY	1	1956	163			0.55	
MORRO BAY	2	1955	163			0.55	
MORRO BAY	3	1962	338			0.55	
MORRO BAY	4	1963	338			0.55	
MOSS LANDING	1	1950	116			0.55	
MOSS LANDING	2	1950	115			0.55	
MOSS LANDING	3	1951	117			0.55	
MOSS LANDING	4	1952	117			0.55	
MOSS LANDING	5	1952	117			0.55	
MOSS LANDING	6	1967	739			0.55	
MOSS LANDING	7	1968	739			0.55	
OLEUM STEAM	1	1942	41			0.55	
OLEUM STEAM	2	1943	46			0.55	
OLIVE	1	1959	46			0.28	
OLIVE	2	1964	53			0.28	
ORMOND BEACH	1	1971	750			0.55	
ORMOND BEACH	2	1973	750			0.55	
PITTSBURG	1	1954	153			0.55	
PITTSBURG	2	1954	163			0.55	
PITTSBURG	3	1954	153			0.55	
PITTSBURG	4	1954	163			0.55	
PITTSBURG	5	1960	325			0.55	

TABLE IX.18 California (Cont'd)

Plant Name	Unit ID	Year on Line	Capacity (MW)	Emission Limits (lb/10 ⁶ Btu)			Averaging Period (hr)
				Stated Coal ^a	Equiv. Annual Avg. ^b	Oil/Gas	
PITTSBURG	6	1961	325			0.55	
PITTSBURG	7	1972	720			0.55	
POTRERO	1 ^c	1931	58			0.55	
POTRERO	2 ^c	1931	58			0.55	
POTRERO	3	1965	207			0.55	
REDONDO BEACH	1	1948	74			0.28	
REDONDO BEACH	2	1948	74			0.28	
REDONDO BEACH	3	1949	70			0.28	
REDONDO BEACH	4	1949	74			0.28	
REDONDO BEACH	5	1954	175			0.28	
REDONDO BEACH	6	1957	175			0.28	
REDONDO BEACH	7	1967	480			0.28	
REDONDO BEACH	8	1967	480			0.28	
SAN BERNARDINO	1	1957	63			0.28	
SAN BERNARDINO	2	1958	63			0.28	
SCATTERGOOD	1	1958	179			0.28	
SCATTERGOOD	2	1959	179			0.28	
SCATTERGOOD	3	1974	284			0.28	
SILVER GATE	1	1943	38			0.55	
SILVER GATE	2	1948	64			0.55	
SILVER GATE	3	1950	64			0.55	
SILVER GATE	4	1952	64			0.55	
SOUTH BAY	1	1960	140			0.55	
SOUTH BAY	2	1962	142			0.55	
SOUTH BAY	3	1964	198			0.55	
SOUTH BAY	4	1971	220			0.55	
STATION B	21	1923	17			0.55	
STATION B	22	1927	18			0.55	
STATION B	24	1928	28			0.55	
STATION B	25	1938	41			0.55	
VALLEY	1	1954	94			0.28	
VALLEY	2	1954	101			0.28	
VALLEY	3	1955	171			0.28	
VALLEY	4	1956	160			0.28	

^aLimit as stated in regulations.^bEquivalent coal limit to account for variability of sulfur content.^cUnit not on line in 1984.^dNSPS unit.

TABLE IX.19 Nevada: Summary of Air-Quality Attainment

Air Quality Status	Pollutant				
	SO ₂ ^a	TSP ^{a,b}	CO	O ₃	NO _x
Attainment					
No. of Counties Containing NA Areas in 1981	2/0	8/4	3	3	0
No. of Counties Containing NA Areas in 1987	2/0	7/3	3	0	0
State Implementation Plan ^c	D/N	A/A	S	R	S
Improvement (1981 to 1987)					
No. of Counties that Changed from Primary NA to Secondary NA	0	1	d	d	d
No. of Counties that Changed from Secondary NA to Full Attainment	0	1	d	d	d
No. of Counties that Changed from Primary NA to Full Attainment	0	1	0	3	0
Total No. of Counties that Improved	0	3	0	3	0
Deterioration (1981 to 1987)					
No. of Counties that Changed from Secondary NA to Primary NA	0	0	d	d	d
No. of Counties that Changed from Full Attainment to Secondary NA	0	0	d	d	d
No. of Counties that Changed from Full Attainment to Primary NA	0	1	0	0	0
Total No. of Counties that Deteriorated	0	1	0	0	0

^aWhen two values given: Primary NA/Secondary NA.

^bTSP standard replaced by fine particulate standard (PM₁₀) on July 31, 1987. See Sec. 2 of the report summary for details on PM₁₀ and a full list of Group I and II areas. Nevada: Group I counties = 2; Group II counties = 4.

^cA = Approved; C = Conditionally Approved; D = Disapproved; E = Extended Deadline; I = Incomplete; N = Not Required; R = Under Review; S = see SIP summary.

^dNo secondary standard exists for CO, O₃, or NO_x.

TABLE IX.19 Nevada: Comparison of 1981 and 1987 County Nonattainment Designations^a

County Code	County	SO ₂				TSP				CO		O ₃		NO _x	
		Prim		Sec		Prim		Sec		Prim		Prim		Prim	
		81	87	81	87	81	87	81	87	81	87	81	87	81	87
32001	CHURCHILL					P	P								
32003	CLARK					P	P			P	P	P			
32005	DOUGLAS									P	P	P			
32007	ELKO	P	P					P	P						
32011	EUREKA							P							
32013	HUMBOLDT					P	P	P	P						
32015	LANDER					P		P	P						
32019	LYON					P	P								
32021	MINERAL					P	P								
32023	NYE					P									
32029	STOREY						W								
32031	WASHOE					P	P			P	P	P			
32033	WHITE PINE	P	P												

^aP = part of county, W = whole county.



FIGURE IX.13 Nevada: SO₂ Nonattainment Areas as Designated in 1987

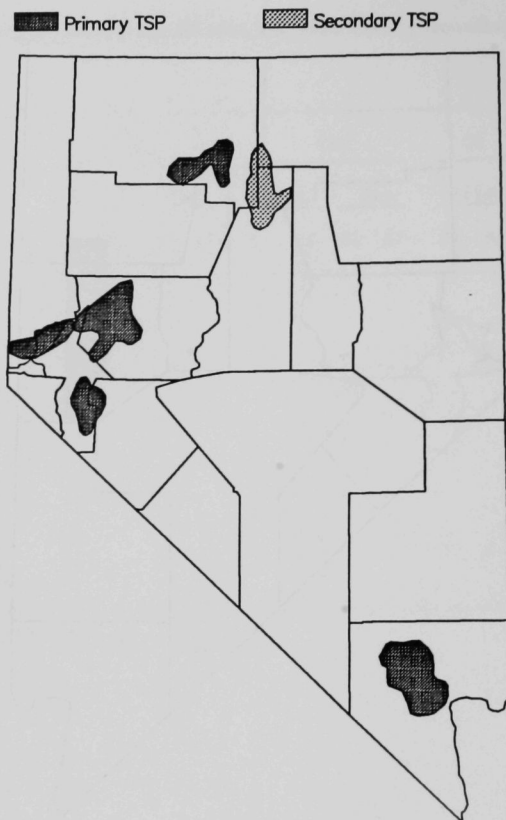


FIGURE IX.14 Nevada: TSP Nonattainment Areas as Designated in 1987

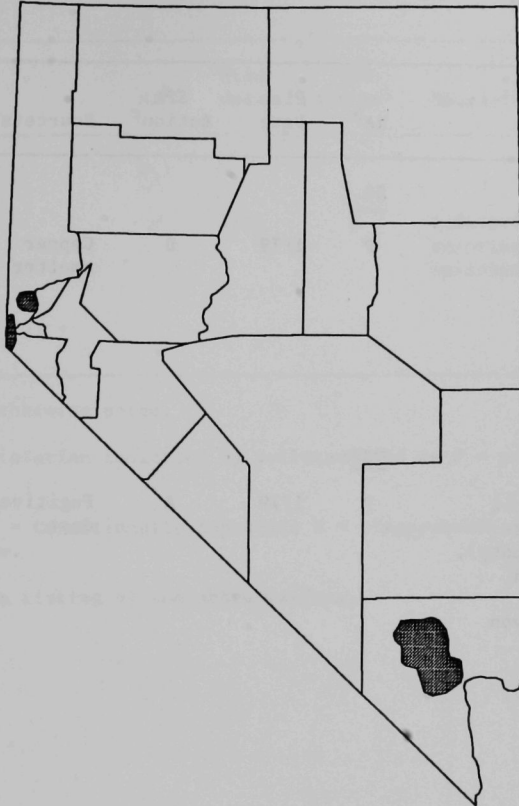


FIGURE IX.15 Nevada: CO Nonattainment Areas as Designated in 1987

TABLE IX.20 Nevada: Synopsis of SIP Attainment Strategies for Areas Currently in Violation of NAAQS

Area ^a	NA ^b	Plan Date	EPA Action ^c	Source(s)	Strategy ^d
<u>SO₂:</u>					
Steptoe Valley	P	1/79	D	Copper smelter	Existing federal SIP emission limits adequate; smelter temporarily closed
<u>TSP:</u>					
Winnemucca (Humboldt County), Las Vegas Valley (Clark County), Carson Desert and Fernley Basin (Churchill and Lyon counties), Mason Valley (Lyon and Mineral counties), Truckee Meadows (Washoe County), Hydrogeographic Sub Basins	P	1/79	A	Fugitive dust	Pave, clean streets
Lower Reese River Valley (Elko, Lander and Humboldt), Clovers Area (Eureka and Lander counties) Hydrogeographic Sub Basins	S	1/79	A	Fugitive dust	Pave, clean streets
<u>CO:</u>					
Truckee Meadows (Reno)	P	11/85	R	Mobile	FMVECP; TCM; I&M; attainment by 1987
Las Vegas	P	1/79	C	Mobile	FMVECP; TCM; I&M; attainment by 1987

TABLE IX.20 Nevada (Cont'd)

Area ^a	NA ^b	Plan Date	EPA Action ^c	Source(s)	Strategy ^d
<u>O₃:</u>					
Las Vegas	P	1/85	R	Industrial chlorine emissions	Industrial chlorine controls; FMVECP; TCM; redesignate to attainment

^aCities unless otherwise noted.

^bNonattainment violation indicated by pollutant and as P = primary and S = secondary.

^cA = Approved; C = Conditionally Approved; D = Disapproved; I = Incomplete; R = Under Review.

^dSee p. vii for a listing of the abbreviations.

TABLE IX.21 Nevada: PSD Class I Areas

Location ^a	Area Name	Acreage
1	Jarbidge Wilderness	64,667

^aSee Fig. IX.16.

TABLE IX.22 Nevada: Recommended Class I Areas

Area Name	Total Acreage	Acreage Already Class I
Death Valley National Monument	2,067,628	-

TABLE IX.23 Nevada: Areas That Cannot Be Reclassified as Class III

Area Name	Total Acreage	Acreage Already Class I
National Wildlife Refuges:		
Ash Meadows	11,173	-
Desert	1,588,779	-
Fallon	17,902	-
Ruby Lake	37,632	-
Sheldon	571,048 ^a	-
Stillwater	24,203	-
National Recreation Area:		
Lake Mead	1,495,666 ^b	-
National Monuments:		
Death Valley National Monument	2,067,623	-

^aIncludes acreage in Oregon.

^bIncludes acreage in Arizona.

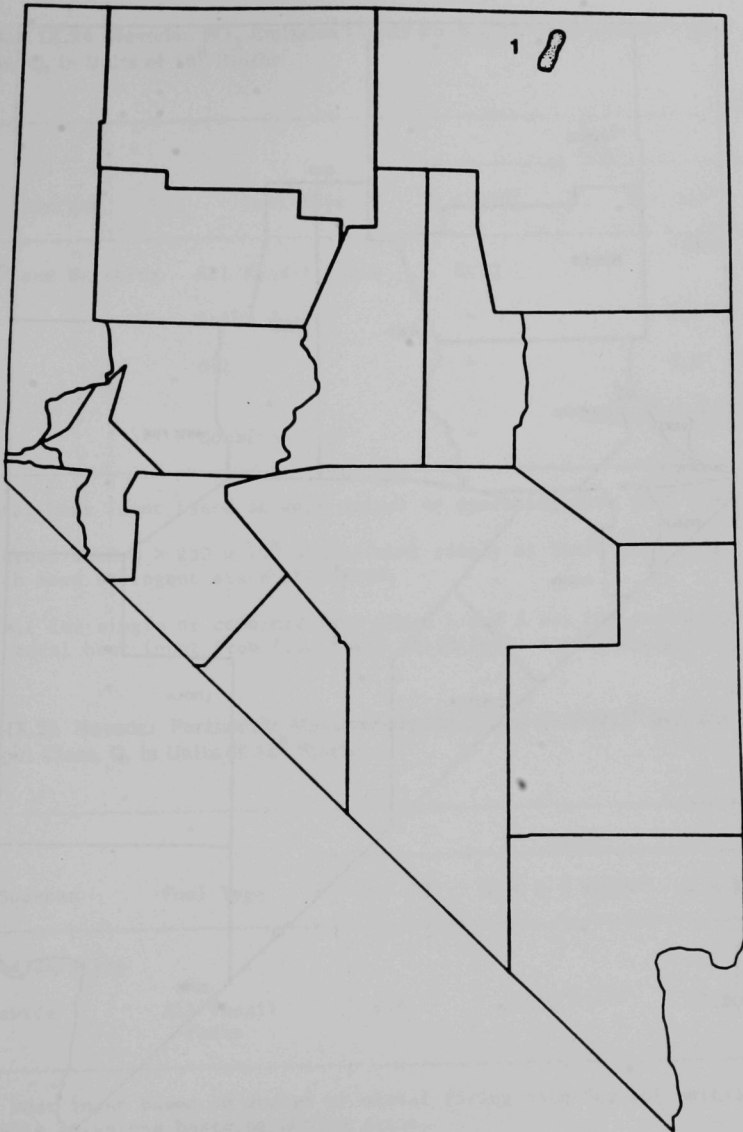


FIGURE IX.16 Nevada: PSD Class I Area



FIGURE IX.17 Nevada: Key to Counties

TABLE IX.24 Nevada: SO₂ Emission Limits (lb SO₂/10⁶ Btu) by Heat Input Class, Q, in Units of 10⁶ Btu/hr

Sources	Fuel Type	Limit	
		Q < 250 ^a	Q ≥ 250 ^a
New ^b and Existing	All Fossil Fuels	0.7Q	-
	Solid Fuel	-	0.6
	Oil	-	0.4
	Combined Fuel	-	$\frac{L(0.4) + S(0.6)^c}{L + S}$

^aTotal heat input based on unit actual or operating rate (10⁶ Btu/hr).

^bSources with Q > 250 × 10⁶ Btu/hr must comply at least with NSPS, or with more stringent state standards.

^cLimit for single or combined fuel where L and S are the percentages of total heat input from liquid and solid fuel, respectively.

TABLE IX.25 Nevada: Particulate Matter Emission Limits (lb PM/10⁶ Btu) for Heat Input Class, Q, in Units of 10⁶ Btu/hr

Sources	Fuel Type	Limit		
		$4 < Q \leq 10^a$	$10 < Q < 4,000^a$	$Q \geq 4,000^a$
New ^b and Existing				
Statewide	All Fossil Fuels	0.6	$1.02Q^{-0.231}$	$17.0Q^{-0.568}$

^aTotal heat input based on design or actual firing rate for all units; allowable emissions based on entire plant.

^bSources with Q > 250 × 10⁶ Btu/hr must comply with at least NSPS, or with more stringent state standards.

TABLE IX.26 Nevada: SO₂ Emission Limits for Electrical Utility Generating Plants

Plant Name	Unit ID	Year on Line	Capacity (MW)	Emission Limits (lb/10 ⁶ Btu)			Averaging Period (hr)
				Stated Coal ^a	Equiv. Annual Avg. ^b	Oil/Gas	
ALLEN ^d	1 ^c	1994	500	0.10	0.09		720
ALLEN ^d	2 ^c	1995	500	0.10	0.09		720
ALLEN ^d	3 ^c	1996	500	0.10	0.09		720
ALLEN ^d	4 ^c	1997	500	0.10	0.09		720
CLARK	1	1955	48			0.80	1
CLARK	2	1956	72			0.80	1
CLARK	3	1961	73			0.80	1
FORT CHURCHILL	1	1968	110			0.80	1
FORT CHURCHILL	2	1971	110			0.80	1
GARDNER, REID	1	1965	110	0.55	0.43	0.55	1
GARDNER, REID	2	1968	110	0.55	0.43	0.55	1
GARDNER, REID ^d	3	1976	110	0.55	0.43	0.55	1
GARDNER, REID ^d	4	1983	250	0.29			
MOHAVE	1	1971	818	1.20	0.93		1
MOHAVE	2	1971	790	1.20	0.93		1
SUNRISE	1	1964	85			0.80	1
THOUSAND SP. ^d	1 ^c	1991	500	0.60	0.57		720
THOUSAND SP. ^d	2 ^c	1993	500	0.60	0.57		720
THOUSAND SP. ^d	3 ^c	1995	500	0.60	0.57		720
TRACY	1	1963	53			0.80	1
TRACY	2	1965	83			0.80	1
TRACY	3	1974	110			0.80	1
VALMY ^d	1	1981	250	1.20	1.13		720
VALMY ^d	2 ^c	1985	250	0.60	0.57		720
WHITE PINE ^d	1 ^c	1989	750	0.12	0.11		720
WHITE PINE ^d	2 ^c	1998	750	0.12	0.11		720

^aLimit as stated in regulations.^bEquivalent coal limit to account for variability of sulfur content.^cUnit not on line in 1984.^dNSPS unit.

**APPENDIX X,
FEDERAL REGION X:**

**IDAHO
OREGON
WASHINGTON**

TABLE X.1 Idaho: Summary of Air-Quality Attainment

Air Quality Status	Pollutant				
	SO ₂ ^a	TSP ^{a,b}	CO	O ₃	NO _x
Attainment					
No. of Counties Containing NA Areas in 1981	3/0	4/0	1	0	0
No. of Counties Containing NA Areas in 1987	0/0	2/3	1	0	0
State Implementation Plan ^c	N/N	A/A	A	N	N
Improvement (1981 to 1987)					
No. of Counties that Changed from Primary NA to Secondary NA	0	1	d	d	d
No. of Counties that Changed from Secondary NA to Full Attainment	0	0	d	d	d
No. of Counties that Changed from Primary NA to Full Attainment	3	1	0	0	0
Total No. of Counties that Improved	3	2	0	0	0
Deterioration (1981 to 1987)					
No. of Counties that Changed from Secondary NA to Primary NA	0	0	d	d	d
No. of Counties that Changed from Full Attainment to Secondary NA	0	0	d	d	d
No. of Counties that Changed from Full Attainment to Primary NA	0	0	0	0	0
Total No. of Counties that Deteriorated	0	0	0	0	0

^aWhen two values given: Primary NA/Secondary NA.

^bTSP standard replaced by fine particulate standard (PM₁₀) on July 31, 1987. See Sec. 2 of the report summary for details on PM₁₀ and a full list of Group I and II areas. Idaho: Group I counties = 5; Group II counties = 1.

^cA = Approved; C = Conditionally Approved; D = Disapproved; E = Extended Deadline; I = Incomplete; N = Not Required; R = Under Review; S = see SIP summary.

^dNo secondary standard exists for CO, O₃, or NO_x.

TABLE X.2 Idaho: Comparison of 1981 and 1987 County Nonattainment Designations^a

County Code	County	SO ₂				TSP				CO		O ₃		NO _x	
		Prim		Sec		Prim		Sec		Prim		Prim		Prim	
		81	87	81	87	81	87	81	87	81	87	81	87	81	87
16001	ADA									P	P				
16005	BANNOCK	P				P	P		P						
16029	CARIBOU	P				P	P		P						
16069	NEZ PERCE					P			P						
16079	SHOSHONE	P				P									

^ap = part of county, W = whole county.

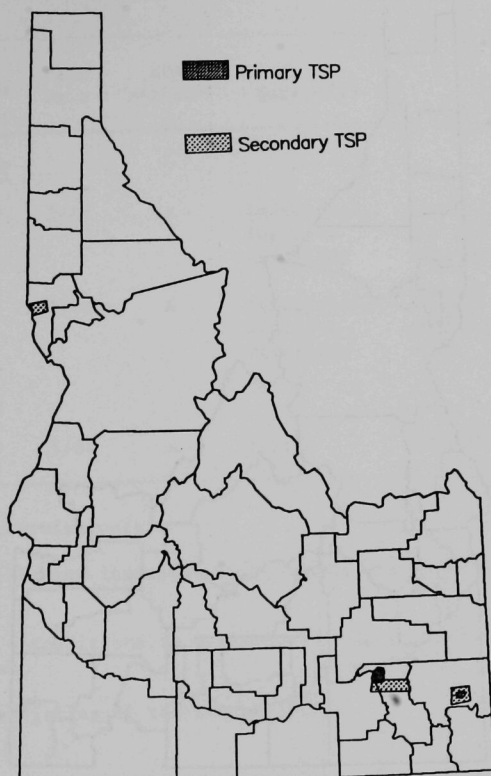
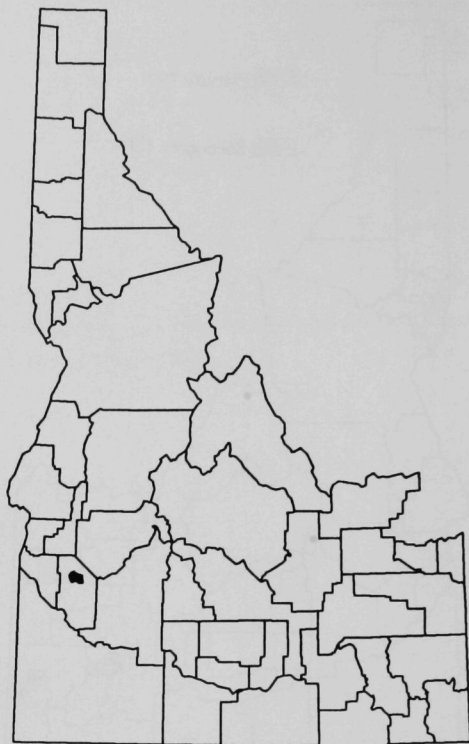


FIGURE X.1 Idaho: TSP Nonattainment Areas as Designated in 1987



**FIGURE X.2 Idaho: CO Nonattainment Areas
as Designated in 1987**

TABLE X.3 Idaho: Synopsis of SIP Attainment Strategies for Areas Currently in Violation of NAAQS

Area ^a	NA ^b	Plan Date	EPA Action ^c	Source(s)	Strategy ^d
<u>TSP</u>					
Pocatello	P	2/81	A	Industrial, fugitive emissions	Control of major stationary and fugitive sources; road dust
Soda Springs	P	1/80	A	Industrial, fugitive emissions	Control of major and fugitive sources; road dust
<u>CO</u>					
Ada	P	5/84	A	Mobile	FMVECP; I&M; RACMs

^aCities unless otherwise noted.

^bNonattainment violation indicated by pollutant and as P = primary and S = secondary.

^cA = Approved; C = Conditionally Approved; D = Disapproved; I = Incomplete; R = Under Review.

^dSee p. vii for a listing of the abbreviations.

TABLE X.4 Idaho: PSD Class I Areas

Location ^a	Area Name	Acreage
1	Selway-Bitterroot Wilderness	983,417 ^b
2	Hells Canyon Wilderness	83,800 ^c
3	Sawtooth Wilderness	216,383
4	Craters of the Moon Wilderness	43,243
5	Yellowstone National Park	31,488 ^d

^aSee Fig. X.3.

^bSelway-Bitterroot Wilderness, 1,232,310 acres overall, includes an area in Montana.

^cHells Canyon, 192,700 acres overall, includes an area in Oregon.

^dYellowstone National Park, 2,219,785 acres overall, includes areas in Montana and Wyoming.

TABLE X.5 Idaho: Recommended Class I Areas

Area Name	Total Acreage	Acreage Already Class I
Craters of the Moon National Monument	53,545	43,243

TABLE X.6 Idaho: Areas That Cannot Be Reclassified as Class III

Area Name	Total Acreage	Acreage Already Class I
National Monuments:		
Craters of the Moon	53,545	43,243
National Recreation Areas:		
Sawtooth	753,881	216,383
National Wild and Scenic Rivers:		
Clearwater River, Middle Fork	55,597	-
St. Joe River	21,931	-
Salmon River, Middle Fork	33,574	-
Salmon River	40,000	-
National Wildlife Refuges:		
Bear Lake	17,605	-
Camas	10,656	-
Deer Flat	11,410 ^a	-
Grays Lake	16,176	-
Minidoka	20,721	-
National Wilderness Areas:		
Gospel Hump	206,053	-
River of No Return	2,239,000	-
Selway-Bitterroot	105,600	983,417

^aIncludes acreage in Oregon.

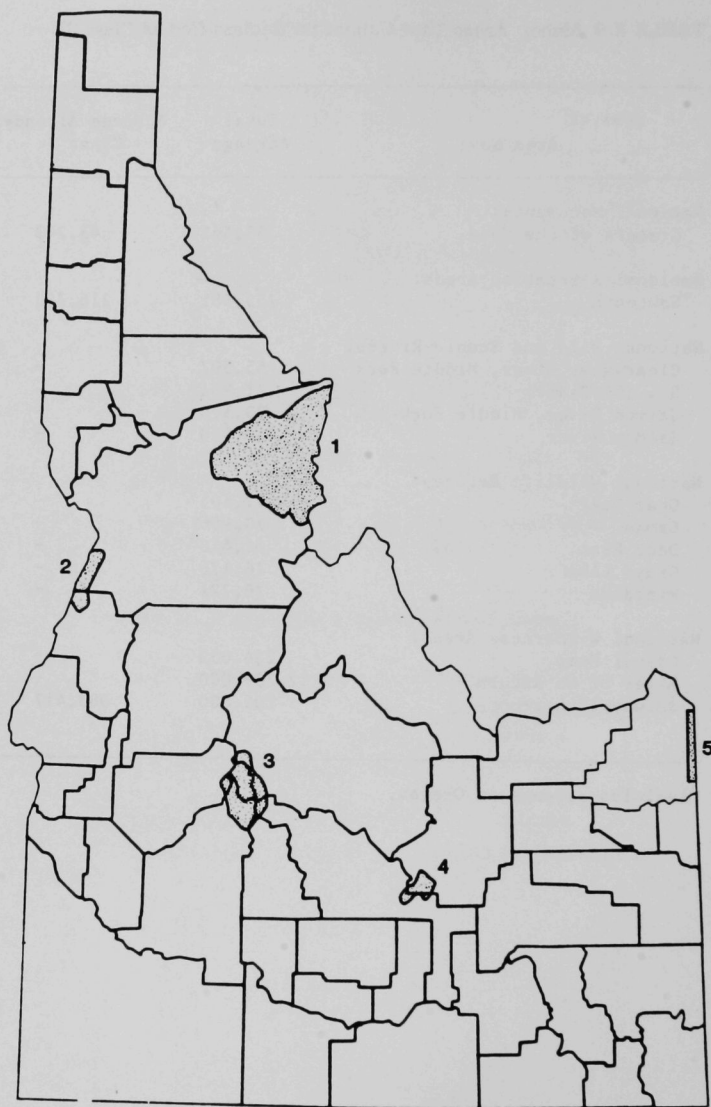


FIGURE X.3 Idaho: PSD Class I Areas

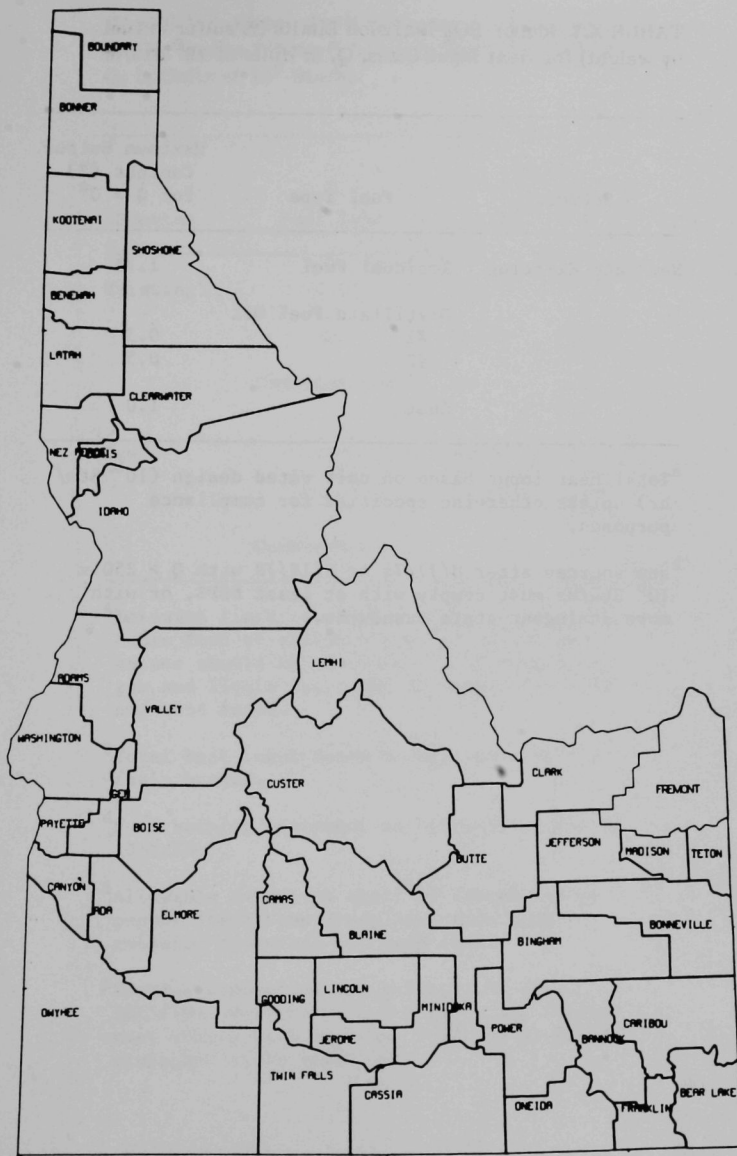


FIGURE X.4 Idaho: Key to Counties

TABLE X.7 Idaho: SO₂ Emission Limits (% sulfur in fuel by weight) for Heat Input Class, Q, in Units of 10⁶ Btu/hr

Sources	Fuel Type	Maximum Sulfur Content (%) for Q > 0 ^a
New ^b and Existing	Residual Fuel	1.75
	Distillate Fuel Oil	
	#1	0.3
	#2	0.5
	Coal	1.0

^aTotal heat input based on unit rated design (10⁶ Btu/hr) unless otherwise specified for compliance purposes.

^bNew sources after 8/17/71 or 9/18/78 with Q > 250 x 10⁶ Btu/hr must comply with at least NSPS, or with more stringent state standards.

TABLE X.8 Idaho: Particulate Matter Emission Limits (grains PM/dscf) for Heat Input Class, Q, in Units of 10^6 Btu/hr

Sources	Fuel Type	Limit ^a	
		Q < 10^b	Q ≥ 10^b
Existing ^c	Coal	0.1	0.1
	Oil	0.05	0.05
	Combined Fuels	d	d
New ^e	Coal	0.05	0.05
	Oil	0.05	0.05
	Combined Fuels	d	d

^aEmission limit is in grains per standard dry cubic foot of effluent gas, where the gas volume should be corrected to 3% oxygen for gas and liquid fuels and 8% oxygen for coal and wood fuels.

^bTotal heat input based on aggregate of all fuels burned.

^cFuel burning equipment in operation prior to 10/1/79.

^dAllowable emissions shall be determined by proportioning the gross heat input and emission standards for each fuel.

^eSources commencing operation on or after 10/1/79. Sources with Q > 250×10^6 Btu/hr must comply with at least NSPS, or with more stringent state standards.

TABLE X.9 Oregon: Summary of Air-Quality Attainment

Air Quality Status	Pollutant				
	SO ₂ ^a	TSP ^{a,b}	CO	O ₃	NO _x
Attainment					
No. of Counties Containing NA Areas in 1981	0/0	1/4	6	6	0
No. of Counties Containing NA Areas in 1987	0/0	1/4	7	4	0
State Implementation Plan ^c	N/N	A/A	S	A	N
Improvement (1981 to 1987)					
No. of Counties that Changed from Primary NA to Secondary NA	0	1	d	d	d
No. of Counties that Changed from Secondary NA to Full Attainment	0	0	d	d	d
No. of Counties that Changed from Primary NA to Full Attainment	0	0	0	2	0
Total No. of Counties that Improved	0	1	0	2	0
Deterioration (1981 to 1987)					
No. of Counties that Changed from Secondary NA to Primary NA	0	1	d	d	d
No. of Counties that Changed from Full Attainment to Secondary NA	0	0	d	d	d
No. of Counties that Changed from Full Attainment to Primary NA	0	0	1	0	0
Total No. of Counties that Deteriorated	0	1	1	0	0

^aWhen two values given: Primary NA/Secondary NA.

^bTSP standard replaced by fine particulate standard (PM₁₀) on July 31, 1987. See Sec. 2 of the report summary for details on PM₁₀ and a full list of Group I and II areas. Oregon: Group I counties = 4; Group II counties = 4.

^cA = Approved; C = Conditionally Approved; D = Disapproved; E = Extended Deadline; I = Incomplete; N = Not Required; R = Under Review; S = see SIP summary.

^dNo secondary standard exists for CO, O₃, or NO_x.

TABLE X.10 Oregon: Comparison of 1981 and 1987 County Nonattainment Designations^a

County Code	County	SO ₂				TSP				CO		O ₃		NO _x	
		Prim		Sec		Prim		Sec		Prim		Prim		Prim	
		81	87	81	87	81	87	81	87	81	87	81	87	81	87
41005	CLACKAMAS							P	P	P	P	P	P		
41029	JACKSON					P		P		P	P	P			
41033	JOSEPHINE										P				
41039	LANE					P			P	P	P	P			
41047	MARION									P	P	P	P		
41051	MULTNOMAH							P	P	P	P	P	P		
41067	WASHINGTON							P	P	P	P	P	P		

^ap = part of county, W = whole county.

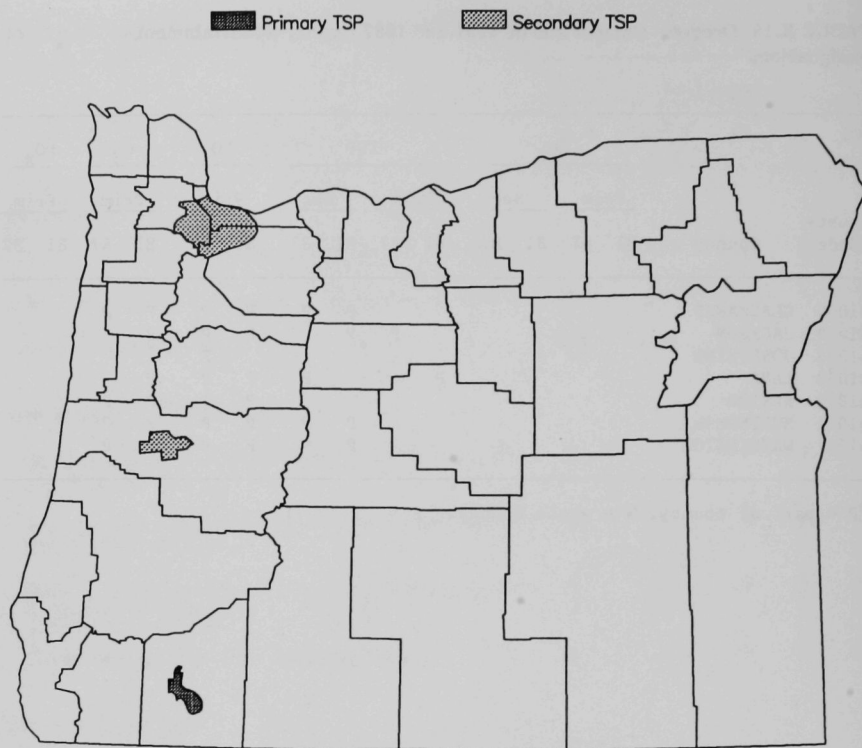


FIGURE X.5 Oregon: TSP Nonattainment Areas as Designated in 1987

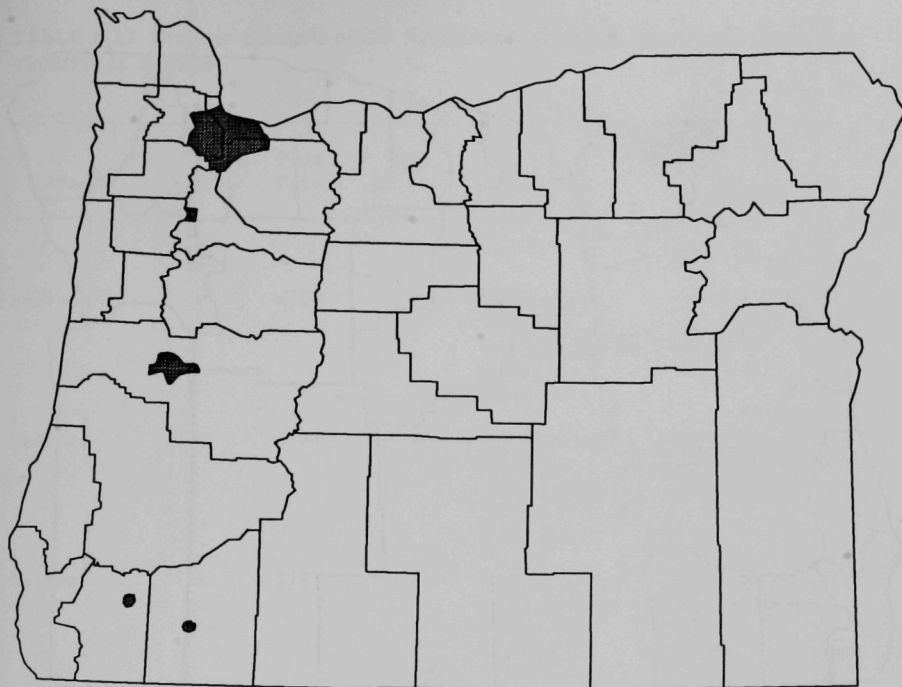


FIGURE X.6 Oregon: CO Nonattainment Areas as Designated in 1987

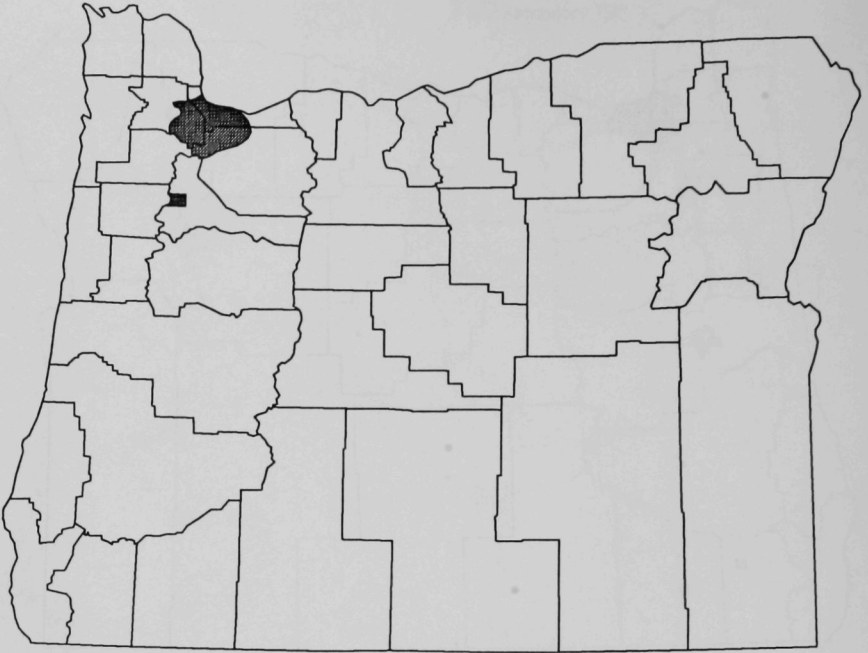


FIGURE X.7 Oregon: O₃ Nonattainment Areas as Designated in 1987

TABLE X.11 Oregon: Synopsis of SIP Attainment Strategies for Areas Currently in Violation of NAAQS

Area ^a	NA ^b	Plan Date	EPA Action ^c	Source(s)	Strategy ^d
<u>TSP:</u>					
Medford	P	4/83	A	Vegetation burning; wood products industry, road dust	Industrial controls, wood stove certification
Medford	S	4/84	A	Vegetation burning; wood products industry, road dust	Weatherization, road dust control measures
Eugene	S	3/81	A	Road dust, wood stoves, industrial sources	Road paving, weatherization, control of air conveying system
<u>CO</u>					
Medford	P	10/85	A	Mobile	FMVECP; Biennial I&M; ATP; RACMs
Portland	P	7/82	A	Mobile	FMVECP; Biennial I&M; TCMs
Salem	P	4/79	A	Mobile	FMVECP; TCMs
Grant's Pass	P	11/86	P	Mobile	FMVECP; construction of bridge
<u>O₃</u>					
Portland	P	7/82	A	Stationary, mobile	TCMs; FMVECP; I&M; industrial VOC controls

TABLE X.11 Oregon (Cont'd)

Area ^a	NA ^b	Plan Date	EPA Action ^c	Source(s)	Strategy ^d
Salem	P	10/80	A	Portland VOC emissions	RACT on VOC sources; LAER for new or modified sources; RACMs; FMVECP

^aCities unless otherwise noted.

^bNonattainment violation indicated by pollutant and as P = primary and S = secondary.

^cA = Approved; C = Conditionally Approved; D = Disapproved; I = Incomplete; R = Under Review; P = Proposed Approval.

^dSee p. vii for a listing of the abbreviations.

TABLE X.12 Oregon: PSD Class I Areas

Location ^a	Area Name	Acreage
1	Mount Hood Wilderness	14,160
2	Hells Canyon	108,900 ^b
3	Eagle Cap Wilderness	293,476
4	Mount Jefferson Wilderness	100,208
5	Mount Washington	46,116
6	Three Sisters Wilderness	199,902
7	Strawberry Mountain Wilderness	33,003
8	Diamond Peak Wilderness	36,637
9	Crater Lake National Park	183,224
10	Kalmiopsis	76,900
11	Mountain Lakes Wilderness	23,071
12	Gearhart Mountain Wilderness	18,709

^aSee Fig. X.8.

^bHells Canyon, 192,700 acres overall, includes an area in Idaho.

TABLE X.13 Oregon: Recommended Class I Areas

Area Name	Total Acreage	Acreage Already Class I
John Day Fossil Beds National Monument	14,014	-

TABLE X.14 Oregon: Areas That Cannot Be Reclassified as Class III

Area Name	Total Acreage	Acreage Already Class I
National Monuments:		
John Day Fossil Beds	14,014	-
National Recreation Areas:		
Hells Canyon	525,608 ^a	192,700
Oregon Dunes	32,348	-
National Wild and Scenic Rivers:		
Rogue River	25,999	-
Snake River	19,095 ^a	-
Illinois River	14,908	-
National Wildlife Refuges:		
Hart Mountain	248,774	-
Klamath Forest	16,377	-
Malheur	183,485	-
Upper Klamath	12,457	-
National Parks:		
Crater Lake	183,224	160,290
National Wilderness Areas:		
Badger Creek	24,000	-
Black Canyon	13,400	-
Boulder Creek	19,100	-
Bull of the Woods	34,900	-
Columbia	39,000	-
Grassy Knob	17,200	-
Kalmiopsis	102,730	76,900
Mill Creek	17,400	-
Monument Rock	19,650	-
Mount Hood	33,000	14,160
Mount Thielsen	55,100	-
North Fork John Day	122,905	-
North Fork Umatilla	20,144	-
Rogue-Umpqua Divide	33,200	-
Salmon-Huckleberry	44,560	-
Sky Lakes	116,300	-
Three Sisters	45,400	199,902
Waldo Lake	39,200	-
Wenaha-Tucannon	66,375	-
Wild Rogue	25,658	-

^aIncludes acreage in Idaho.

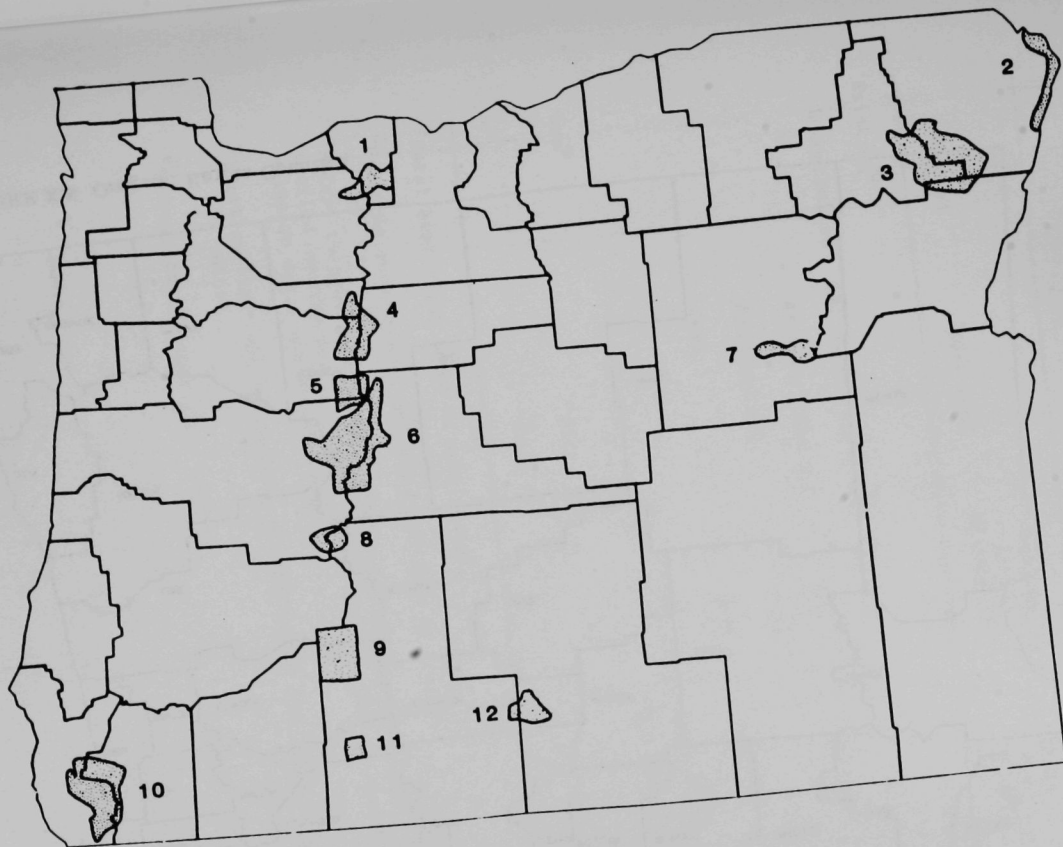


FIGURE X.8 Oregon: PSD Class I Areas

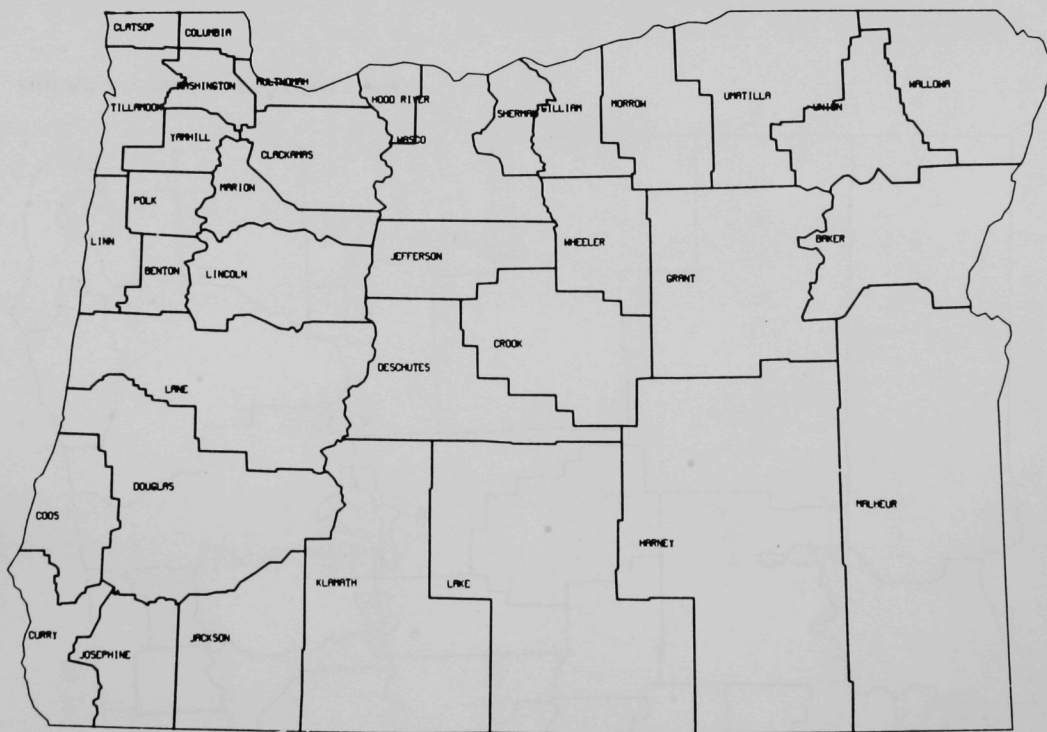


FIGURE X.9 Oregon: Key to Counties

TABLE X.15 Oregon: SO₂ Emission Limits (lb SO₂/10⁶ Btu) by Heat Input Class, Q, in Units of 10⁶ Btu/hr

Sources	Fuel Type	Maximum Sulfur Content (%)	Limit for Q > 0 ^a	
Existing ^b				
Uncontrolled ^c	#1 Distillate Oil	0.3	d	
	#2 Distillate Oil	0.5	d	
	Residual Oil	1.75	d	
	Coal	1.0	d	
			Limit	
			Q ≤ 250	Q > 250
New ^e	Oil	-	1.4	NSPS
	Coal	-	1.6	NSPS

^aTotal heat input based on unit design.

^bExisting sources must achieve compliance by 1/1/72.

^cRefers to source using no SO₂ pollution abatement devices. Controlled sources may use higher sulfur content coal if equivalent emission rates can be achieved.

^dEmission limit met by applying percent sulfur (by weight) in fuel to all units.

^eSources constructed after 1/1/72.

**TABLE X.16 Oregon: Particulate Matter
Emission Limits (grains/scf) for Heat Input
Class, Q, in Units of 10^6 Btu/hr**

Sources	Fuel Type	Limit for Q > 0 ^a
Existing	All Fuels	0.2
New ^{b,c}	All Fuels	0.1

^aBasis of total heat input not specified.
Allowable emissions based on individual stack.

^bConstructed after 6/1/70.

^cSources with Q > 250 x 10⁶ Btu/hr must
comply with at least NSPS, or with more
stringent state standards.

TABLE X.17 Oregon: SO₂ Emission Limits for Electrical Utility Generating Plants

Plant Name	Unit ID	Year on Line	Capacity (MW)	Emission Limits (lb/10 ⁶ Btu)		Oil/ Gas	Averaging Period (hr)
				Stated Coal ^a	Equiv. Annual Avg. ^b		
BOARDMAN ^d	1	1980	530	1.20	0.94		3
BOARDMAN ^d	2 ^c		530	0.68	0.53		1
LINCOLN STREET	1	1919	7			0.33	
LINCOLN STREET	2	1923	8			0.33	
LINCOLN STREET	3	1930	18			0.33	
WEYCO CENTER	4	1976	34	1.50	1.17		1
WILLIAMETTE	1	1931	7	1.50	1.17		1
WILLIAMETTE	2	1941	10	1.50	1.17		1

^aLimit as stated in regulations.

^bEquivalent coal limit to account for variability of sulfur content.

^cUnit not on line in 1984.

^dNSPS unit.

TABLE X.18 Washington: Summary of Air-Quality Attainment

Air Quality Status	Pollutant				
	SO ₂ ^a	TSP ^{a,b}	CO	O ₃	NO _x
Attainment					
No. of Counties Containing NA Areas in 1981	0/0	9/3	4	4	0
No. of Counties Containing NA Areas in 1987	0/0	4/3	4	1	0
State Implementation Plan ^c	N/N	A/A	A	A	N
Improvement (1981 to 1987)					
No. of Counties that Changed from Primary NA to Secondary NA	0	1	d	d	d
No. of Counties that Changed from Secondary NA to Full Attainment	0	1	d	d	d
No. of Counties that Changed from Primary NA to Full Attainment	0	4	0	3	0
Total No. of Counties that Improved	0	6	0	3	0
Deterioration (1981 to 1987)					
No. of Counties that Changed from Secondary NA to Primary NA	0	0	d	d	d
No. of Counties that Changed from Full Attainment to Secondary NA	0	0	d	d	d
No. of Counties that Changed from Full Attainment to Primary NA	0	0	0	0	0
Total No. of Counties that Deteriorated	0	0	0	0	0

^aWhen two values given: Primary NA/Secondary NA.

^bTSP standard replaced by fine particulate standard (PM₁₀) on July 31, 1987. See Sec. 2 of the report summary for details on PM₁₀ and a full list of Group I and II areas. Washington: Group I counties = 6; Group II counties = 2.

^cA = Approved; C = Conditionally Approved; D = Disapproved; E = Extended Deadline; I = Incomplete; N = Not Required; R = Under Review; S = see SIP summary.

^dNo secondary standard exists for CO, O₃, or NO_x.

TABLE X.19 Washington: Comparison of 1981 and 1987 County Nonattainment Designations^a

County Code	County	SO ₂				TSP				CO		O ₃		NO _x	
		Prim		Sec		Prim		Sec		Prim		Prim		Prim	
		81	87	81	87	81	87	81	87	81	87	81	87	81	87
53003	ASOTIN					P			P						
53005	BENTON					P									
53009	CLALLAM							P							
53011	CLARK					P	P					P	P		
53015	COWLITZ							P	P						
53021	FRANKLIN					P									
53033	KING					P	P	P	P	P	P	P			
53053	PIERCE					P	P			P	P	P			
53061	SNOHOMISH											P			
53063	SPOKANE						P			P	P				
53071	WALLA WALLA					P									
53077	YAKIMA					P				P	P				

^aP = part of county, W = whole county.

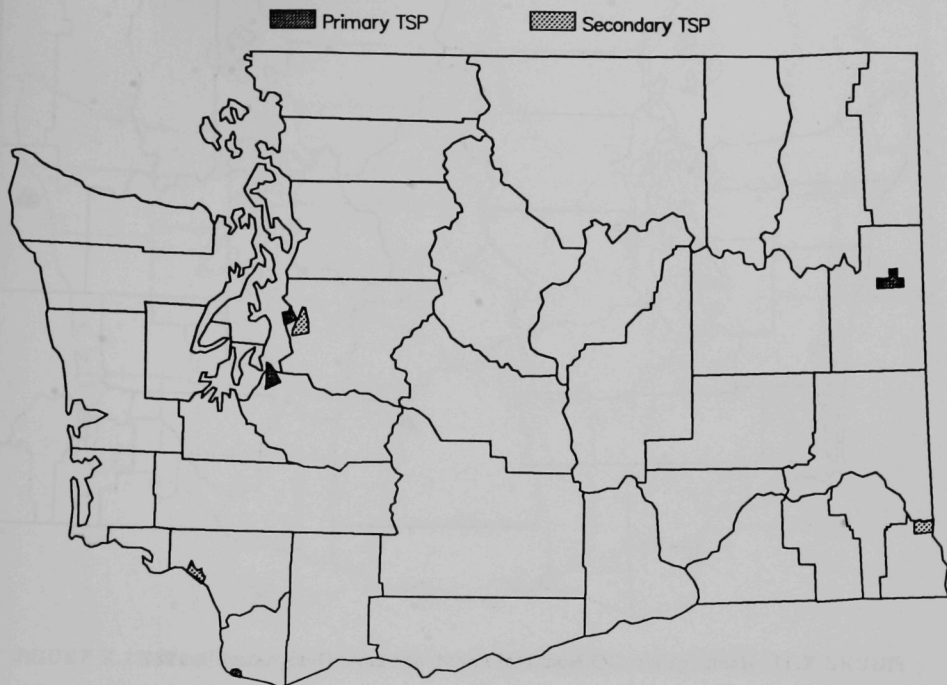


FIGURE X.10 Washington: TSP Nonattainment Areas as Designated in 1987

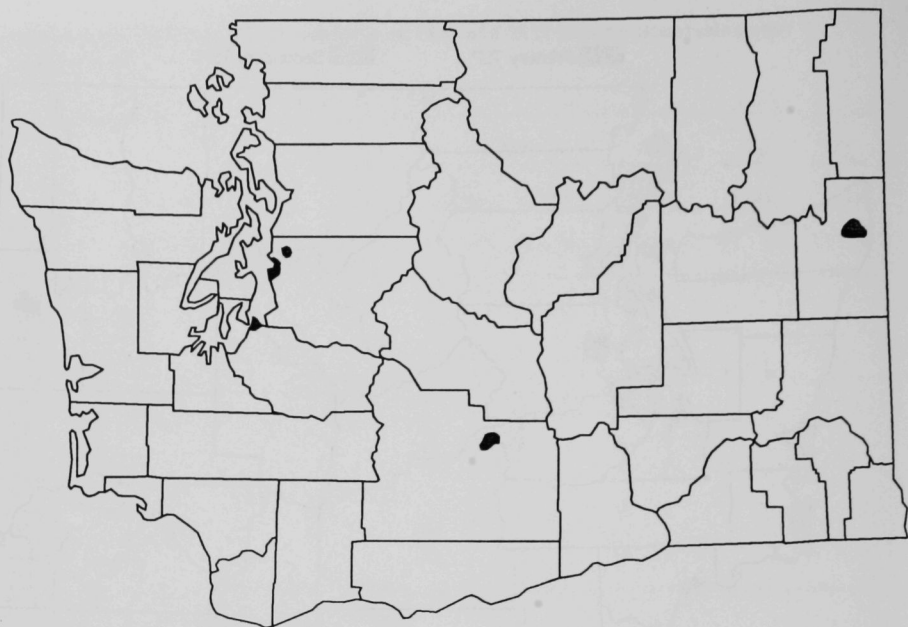


FIGURE X.11 Washington: CO Nonattainment Areas as Designated in 1987

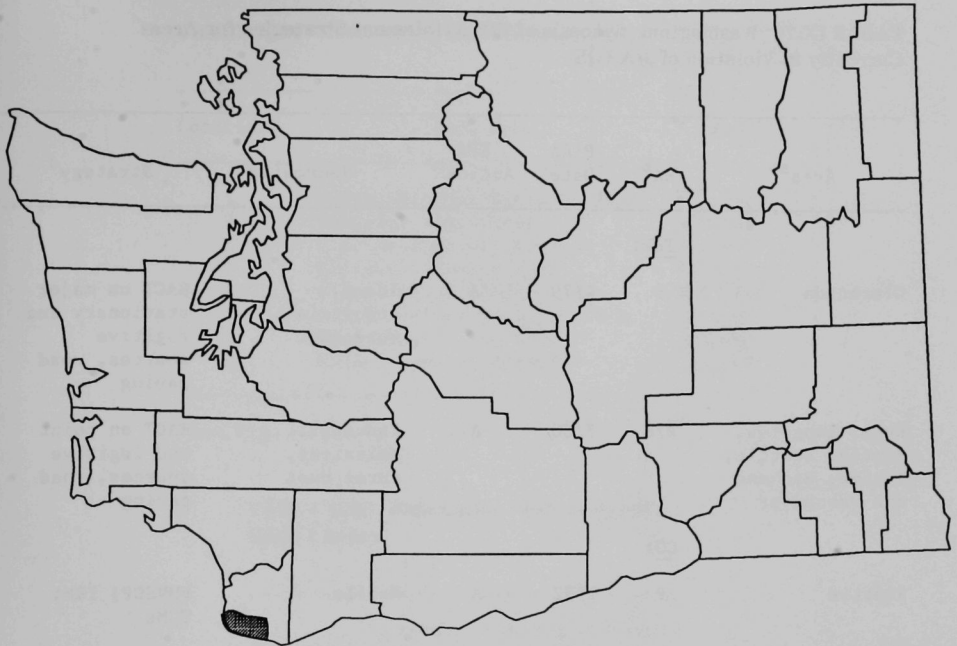


FIGURE X.12 Washington: O₃ Nonattainment Areas as Designated in 1987

TABLE IX.20 Washington: Synopsis of SIP Attainment Strategies for Areas Currently in Violation of NAAQS

Area ^a	NA ^b	Plan Date	EPA Action ^c	Source(s)	Strategy ^d
<u>TSP:</u>					
Clarkston	P	4/79	A	Idaho industrial, road dust	RACT on major stationary and fugitive sources, road paving
Kent, Longview, Renton, Seattle, Tacoma, Spokane and Vancouver	P/S	7/80	A	Industrial emissions, rural dust	RACT on point and fugitive sources, road paving
<u>CO:</u>					
Seattle	P	7/82	A	Mobile	FMVECP; I&M; TCMs
Spokane	P	9/84	A	Mobile	FMVECP; I&M, TCMs
Tacoma	P	6/83	A	Mobile	FMVECP; TCM
Yakima	P	4/79	A	Mobile	FMVECP
<u>O₃:</u>					
Vancouver	P	7/82	A	Mobile; industrial	VOC controls; TCMs; FMVECP; I&M in Portland

^aCities unless otherwise noted.

^bNonattainment violation indicated by pollutant and as P = primary and S = secondary.

^cA = Approved; C = Conditionally Approved; D = Disapproved; I = Incomplete; R = Under Review.

^dSee p. vii for a listing of the abbreviations.

TABLE X.21 Washington: PSD Class I Areas

Location ^a	Area Name	Acreage
1	North Cascades National Park	504,781
2	Pasayten Wilderness	505,524
3	Glacier Peak Wilderness	464,258
4	Olympic National Park	914,818
5	Alpine Lakes Wilderness	303,508
6	Mount Rainier National Park	235,404
7	Goat Rocks Wilderness	82,680
8	Mount Adams Wilderness	32,356

^aSee Fig. X.13.**TABLE X.22 Washington: Recommended Class I Areas**

Area Name	Total Acreage	Acreage Already Class I
None		

TABLE X.23 Washington: Areas That Cannot Be Reclassified as Class III

Area Name	Total Acreage	Acreage Already Class I
National Recreation Areas:		
Coulee Dam	100,390	-
Lake Chelan	61,890	-
Ross Lake	117,574	-
National Wild and Scenic Rivers:		
Skagit River	34,650	-
National Wildlife Refuges:		
Columbia	28,952	-
Little Pend Oreille	40,175	-
Saddle Mountain	30,810	-
Turnbull	15,565	-
Umatilla	22,885 ^a	-
Willipa	11,176	-
National Wilderness Areas:		
Boulder River	48,674	-
Buckhorn	44,217	-
Clearwater	14,258	-
Colonel Bob	11,901	-
Henry M. Jackson	102,673	-
Indian Heaven	20,960	-
Lake Chelan-Sawtooth	151,435	-
Mount Baker	117,528	-
Mount Skokomish	13,319	-
Noisy-Diobsud	14,133	-
Norse Peak	51,343	-
Pasayten	530,031	-
Salmo Priest	41,335	-
Tatoosh	15,750	-
The Brothers	16,836	-
Wenaha Tucanon	111,048 ^a	-
William O. Douglas	168,288	-

^aIncludes acreage in Oregon.

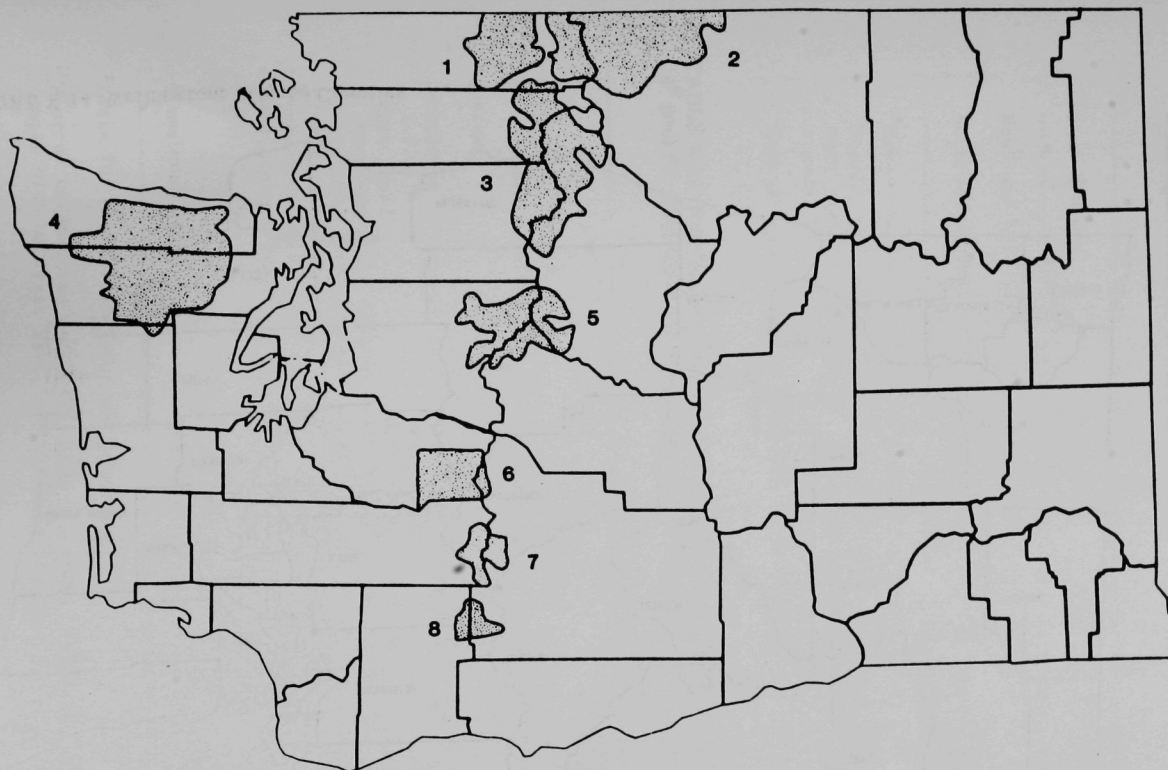


FIGURE X.13 Washington: PSD Class I Areas

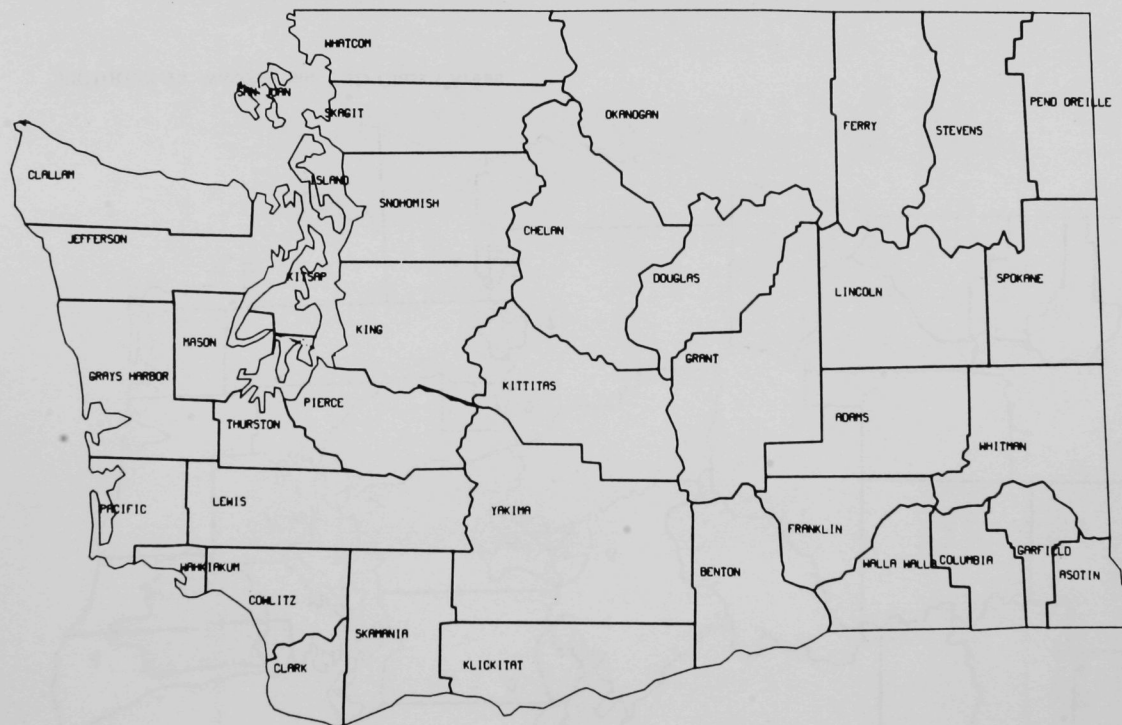


FIGURE X.14 Washington: Key to Counties

TABLE X.24 Washington: SO₂ Emission Limits (ppm SO₂) for Heat Input Class, Q, in Units of 10⁶ Btu/hr

Sources	Fuel Type	Limit for Q > 0 ^a
New ^b and Existing	All Fossil Fuels	1,000 ^c
Northwest A.P.A.	All Fossil Fuels	1.5 lbs SO ₂ /10 ⁶ Btu

^aBasis for heat input determination not specified.

^bSources with Q > 250 x 10⁶ Btu/hr constructed after 8/71 must comply with NSPS, or with more stringent state standards.

^cExhaust gas volume is corrected to 7% oxygen.

TABLE X.25 Washington: Particulate Matter Emission Limits (lb PM/10⁶ Btu) for Heat Input Class, Q, in Units of 10⁶ Btu/hr

Source	Fuel Type	Limit for Q > 0 ^a
Existing		
Northwest	Gaseous and Distillate Fuel	0.05 ^c
A.P.A.	Rest of Fossil	0.1 ^{c,d}
Puget Sound	All Fossil	0.1 ^d
Installed after 3/13/68	All Fossil	0.05 ^d
Installed after 3/1/86	Coal	0.01 ^c
Olympic A.P.C.A.	All Fossil	0.1 ^d
Spokane A.P.C.A.	All Fossil	0.1 ^d
Remainder of State	All Fossil	0.1 ^c
New ^b		
Remainder of State	All Fossil	0.1 ^c

^aBasis for total heat input not specified.

^bSources constructed after 8/71 with Q > 250 x 10⁶ Btu/hr must comply with at least NSPS, or with more stringent state standards.

^cExhaust gas volume is corrected to 7% oxygen.

^dExhaust gas volume is corrected to 12% CO₂.

TABLE X.26 Washington: SO₂ Emission Limits for Electrical Utility Generating Plants

Plant Name	Unit ID	Year on Line	Capacity (MW)	Emission Limits (lb/10 ⁶ Btu)		Oil/ Gas	Averaging Period (hr)
				Stated Coal ^a	Equiv. Annual Avg. ^b		
CENTRALIA	1	1972	650	2.90			
CENTRALIA	2	1972	650	2.90			
CRESTON ^d	1 ^c	1988	508	1.20	1.13		720
CRESTON ^d	2 ^c	1990	508	1.20	1.13		720
CRESTON ^d	3 ^c	1993	508	1.20	1.13		720
CRESTON ^d	4 ^c	1994	508	1.20	1.13		720
FREDONIA ^d	1	1984	104			0.80	
FREDONIA ^d	2	1984	104			0.80	
FREDRICKSON ^d	1	1982	75			0.80	
FREDRICKSON ^d	2	1982	75			0.80	
GEORGETOWN	1	1907	5			1.78	
GEORGETOWN	2	1908	9			1.78	
GEORGETOWN	3	1917	12			1.78	
LAKE UNION	11	1914	11			1.78	
LAKE UNION	12	1918	12			1.78	
LAKE UNION	13	1921	17			1.78	
SHUFFLETON	1	1929	43			2.20	
SHUFFLETON	2	1929	43			2.20	
SHUFFLETON	3	1929	43			2.20	
WHIDBY ISLAND	1	1973	26			2.20	
WHITEHORN	1	1974	60			2.20	
WHITEHORN ^d	2	1980	75			0.80	
WHITEHORN ^d	3	1980	75			0.80	

^aLimit as stated in regulations.^bEquivalent coal limit to account for variability of sulfur content.^cUnit not on line in 1984.^dNSPS unit.

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